

A REVISION OF THE *THYNNIDÆ* OF AUSTRALIA
[*Hymenoptera.*]

PART I.

BY ROWLAND E. TURNER, F.E.S.

The difficulty of procuring reliable information as to the sexes of the *Thynnidae*, as well as their comparatively restricted range, has caused the group to be much neglected. As Australia is the headquarters of the family and many of the species are both conspicuous and numerous as to individuals, it might have been expected that Australian entomologists would have done much work on the group. They have probably been deterred by the difficulties encountered at the outset in the identification of the species, many of the old descriptions, especially Smith's, being insufficient without reference to the types, most of which are in the British Museum or in the Hope Collection at Oxford. These have been consulted for the purpose of the present work. Like most of the groups specially characteristic of Australia, it is most strongly represented in the south, especially in the southwestern part of the continent, comparatively few species, and those mostly of small size, being found within the tropics. Beyond the limits of Australia they occur, though apparently sparingly, in New Guinea and the adjacent islands as far as Celebes; also in Fiji and New Zealand. Further off they are well represented in the Southern States of South America, especially in Chili, a few species spreading as far as California, and other North American States. In Europe and Asia they are represented only by a few species of *Methoca* and *Iswara*, neither of which is at all nearly related to our Australian forms; the latter indeed can only be assigned to the family with considerable hesitation. From Africa rather more species are known,

at present mostly belonging to *Methoca*, but Tullgren* has recently described a new genus *Aeluroides* from a female somewhat resembling those of *Aelurus*; and it is probable that further collecting will reveal the existence of other forms. We can see from its range that the group is one of southern origin, affording an example of relationship between the Australian and South American fauna in a group of by no means world-wide range.

A wide field is open to entomologists in revealing the life-history of these insects, of which practically nothing is known as yet. Bakewell reared a specimen from a subterranean pupa of a moth; but one or two of the males of small Queensland species may be taken flying with species of *Bembex* around their nests; and Mr. C. French has bred a large Victorian specimen allied to *Thynnus rufiventris* Guér., from a cocoon closely resembling that formed in rotten wood by the large fossorial wasp, *Salix australasie* Sm. These facts point to the probability that many species will be found to be parasitical on other Aculeate Hymenoptera as are the *Mutillidae*.

The females of most of the species are probably very short-lived, their mouths being in such a rudimentary state that it is hardly likely that they make any use of them for feeding. Although the female is often carried by the male to blossoms, she does not seem to join him in feeding. The female seems to be seized by the male immediately on emergence in many cases.

The large number of species and the great diversity of form existing among them render a considerable difference in their life-histories probable; nor is it likely that in a group in which individuals are so numerous, the species should be at all narrowly limited in their selection of a host.

The extreme variation in the form of the hypopygium renders any observation on the uses to which that part is put valuable. It does not seem to be necessarily connected with any modification of the copulatory armature, nor to be co-related to the

* Arkiv Zool. i. 1904.

pygidium of the female. During coupling the female is carried by the male, apparently for the greater part of the day. When resting or moving on a leaf or flower the female is extended behind the male, both with the under surface against the leaf. During flight the female hangs below the male in a doubled-up position; the mandibles being applied to the basal part of the hypopygium, which is held depressed at right angles to the abdomen of the male and the aculeus, or sometimes the carina beneath the hypopygium, inserted between the maxillæ of the female. Thus it is possible that there may be a connection between the structure of the hypopygium of the male and the mouth-parts of the female. The male of *Diamma* does not carry the female, the former being much the smaller; and in this group the hypopygium is unarmed and the female mouth-parts fully developed. In other genera in which the hypopygium is unarmed the female does not seem to be taken with the male as often as in other species, though some species of *Eirone* seem to form an exception.

The classification of the group is difficult; Guérin and Westwood founded a number of genera, using the mouth-parts more especially. Some of these genera will certainly stand, and all, being founded on careful dissections, are worthy of consideration and should not be sunk hastily. Saussure uses the hypopygium as a basis for his classification, but only forms one new genus; whereas Klug used the mouth-parts and avoided subdivision as much as possible. Smith, unlike previous authors, paid very little attention to classification, practically confining himself to the description of new species. Of late years Ashmead has attempted a more detailed classification of the group, taking the hypopygium of the male and the pygidium of the female as the basis. This basis is open to criticism, for, as has been pointed out above, these parts do not appear to be co-related, so that we cannot expect the two sexes to fall into parallel lines if this basis is used. There should be some connection between the form of the pygidium in the female and the claspers in the male, but the study of the latter organs will require much more material than

is at present available. Ashmead's classification therefore is not likely to be accepted as to the groundwork, though worthy of careful attention. As to detail, however, he is often inaccurate, giving the wrong number of joints in the maxillary palpi of the male *Anthobosca* and in the labial palpi of the male *Elaphroptera*, although Guérin in his description of the genera is quite correct on these points. His identification of the species which he takes as the types of his genera is also very faulty, the true species often differing much from the characters given by him for the genus of which he makes it the type. This is extreme carelessness, and renders it impossible to use some of his new genera, even were the characteristics sufficiently good to stand, as we cannot tell what the type-species really is. The extreme multiplication of genera which is a characteristic of most of Ashmead's work is probably much more inconvenience than assistance to other workers, but on this point opinions may differ. In the genera dealt with in the present paper Ashmead has made little alteration. I am unable to accept his subfamily *Rhagigasterinae*, which I regret, as in many points it would form a convenient and natural group. My reason for rejecting it is the difficulty of placing the genus *Enteles*, the males of which have always been classed with *Rhagigaster*; whilst the female, except in the six-jointed maxillary palpi, is nearer to Ashmead's *Thynninae*.

Until really large collections, accurately paired, can be obtained from Western Australia, it seems inadvisable to found large numbers of new genera, though it is not desirable to sink old genera where it can be avoided. Dalla Torre in his great Catalogue has added a number of unnecessary synonyms by sinking all the genera, except *Diamma*, in *Thynnus*.

This paper, it is hoped, will be the first of a series of three or four completing a revision of the known Australian species, amounting, with new species available, to nearly four hundred. It seems hardly necessary to publish full descriptions of all Smith's species, his works being easily accessible; supplementary notes only are therefore given, and full descriptions only in cases in which the original description is worthless.

Many species have been received from Mr. C. French, of Melbourne, also from Mr. G. A. Waterhouse and others. Every facility has been given by the authorities of the British Museum and the Oxford University Museum for the examination of their extensive collections and libraries. Most of the North Queensland species are from the collection of the late Gilbert Turner. My thanks are particularly due to Mr. W. W. Froggatt for the loan of his large collection from all parts of Australia, containing a large number of carefully sexed specimens taken in the field. It was originally proposed, when we placed our collections together, that this should be a joint monograph of the *Thynnidae*, but pressure of private and official work compelled him to withdraw from active participation.

Key to the Classification of the Genera treated of in this paper.

i. Male smaller than the female.

♂. Mandibles tridentate. Maxillary palpi six-jointed; labial palpi four-jointed.

Labrum transverse. First and second recurrent nervures received by the second cubital cell close together. First cubital cell not divided. Hypopygium unarmed.

♀. Mandibles quadridentate. Mouth-parts perfect and larger than in the male.

Subfamily i. DIAMMINÆ.

Genus DIAMMA.

ii. Male larger than the female.

♂. Mandibles bidentate. First and second recurrent nervures received by the second and third cubital cells, the second very rarely interstitial with the second transverse cubital nervure. Division of the first cubital cell marked either by a scar or by a more or less complete nervure.

♀. Mouth-parts smaller than in the males, the maxillary palpi more or less rudimentary, mandibles simple, rarely bidentate.

Subfamily ii. THYNNINÆ.

A. ♂. Second recurrent nervure interstitial with the second transverse cubital nervure. Hypopygium broadly and deeply emarginate, without a central spine. Genus I. ONCORHINUS.

B. ♂. Second recurrent nervure received near the base of the third cubital cell. Hypopygium with a long recurved aculeus. Abdomen elongate.

♀. The maxillary palpi never less than four-jointed.

- a.* ♂. Epipygium narrow at the apex.
 ♀. Head quadrilateral, flat. Second abdominal segment without striæ.
- a*². ♂. Clypeus with a raised Λ -shaped carina. Front with a transverse carina.
 ♀. With a sulca on each side of the head from the eye to the occiput. Maxillary palpi six-jointed. Mandibles usually bidentate. Genus 2. RHAGIGASTER.
- b*². ♂. The frontal carina absent or very faint.
 ♀. Without lateral sulcæ on the head. Mandibles simple. Maxillary palpi four-jointed. Tarsal ungues simple. Genus 3. RHYTIDOGASTER.
- b.* ♂. Epipygium truncate or broadly rounded at the apex.
 ♀. Head small, slightly convex, rounded posteriorly. Maxillary palpi six-jointed, mandibles falcate; second abdominal segment transversely striated. Pygidium vertically truncate, striated. Genus 4. ENTELES.
- C. ♂. Hypopygium normal, unarmed.
 ♀. Head quadrilateral, flat, maxillary palpi four-jointed. Abdomen cylindrical.
- a.* ♂. Three apical joints of maxillary palpi elongate. Antennæ rather long.
*a*². ♂. Third cubital cell not narrow along the radial nervure. Genus 5. AELURUS.
- b*². ♂. Third cubital cell very narrow along the radial nervure. Subgenus *Lepteirone*.
- b.* ♂. Three apical joints of maxillary palpi moderately lengthened. Antennæ short. Subgenus *Eirone*.
- D. ♂. Abdomen short, subpetiolate. Hypopygium armed. Three apical joints of the maxillary palpi elongate.
 ♀. Without striæ on the second abdominal segment.
- a.* ♂. Hypopygium tridentate. Labium and behind palpi smooth.
 ♀. Head quadrilateral, flat, very broad. Maxillary palpi six-jointed. Genus 6. ARIPHON.
- b.* ♂. Hypopygium variable. Head concave beneath, the sides with a long curled beard. Labium and palpi with long hairs at the apex.
 ♀. Strongly rugose or punctured. Head slightly convex, rounded posteriorly; maxillary palpi rudimentary. Pygidium simple. Genus 7. TACHYONOMIA.

Subfamily DIAMMINÆ.

Males.—First and second recurrent nervures received by the second cubital cell almost together; the division of the first cubital cell unmarked.

Mandibles tridentate, maxillary palpi six-jointed, labial four-jointed. Labrum transverse, very short. Hypopygium unarmed, claspers short and small.

Females.—Much larger than the male, the mouth-parts fully developed and larger than in the male, mandibles stout, quadridentate; palpi as in the male, but larger. Second abdominal segment smooth, without carinæ; pygidium simple

Genus DIAMMA.

Diamma Westw., Proc. Zool. Soc. London, iii. p.53, 1835(♀).

Tachypterus Guér., Voy. Coq. Zool. ii. 2, p.213,(1830)1839(♂).

Psammatha Shuckard, Trans. Ent. Soc. London, ii. 1, p.68, 1837(♂).

Trachypterus D. Torre, Cat. Hym. viii. 119, 1897 (nec. Guér., Voy. Coq. ii. 2).

Diamma Ashm., Canad. Ent. xxxv., 1903.

Ashmead points out that Guérin's paper in the Voyage de la Coquille was not published until 1839, though the date on the title page is 1830. Westwood's name therefore has priority. Characters as in the subfamily. The antennæ of the male are stout and rather short. The ocelli are present in the female.

D. BICOLOR Westw.

Diamma bicolor Westw., Proc. Zool. Soc. London, iii. p.53, 1835(♀).

Psammatha chalybea Shuckard, Trans. Ent. Soc. London, ii. 1, p.69, 1837(♂).

Tachypterus fasciatus Guér., Voy. Coq. ii. 2, p.217 (1830) 1839 (♂); Guér., Mag. de Zool. xii. 1842(♂).

Tachypterus australis Sauss., Reise d. Nov. Zool. ii. 1, Hym. p.109 n. 1, T. 2, f. 27, 1867(♂).

Tachypterus albopictus Sm., Trans. Ent. Soc. London, 1868, p.237(♂).

The colour of the legs in the males is very variable; the variations in this respect may prove to be local, but as I can detect no differences in females from different localities, I prefer to sink all into one species. I cannot agree with Saussure's remarks on the differences of shape in the thorax and abdomen of the males. I follow other authors in putting the sexes together, having had no personal acquaintance with the species. The large size and brilliant blue colour of the female cause it to be well known to all collectors.

Hab.—Sydney, N. S. W.; Melbourne, Vic.; Adelaide, S. A.; Tasmania

This is the only species of the subfamily in Australia, but one or two males have been described from Argentina which will probably prove to belong to it.

Subfamily THYNNINÆ.

Genus ONCORHINUS Shuckard.

Oncorhinus Shuckard, in Grey's Journ. of two Expeditions to N. W. and W. Australia, ii. p. 471, 1841.

♂. Clypeus very large, tumid, broadly emarginate at the apex. Labrum much narrowed posteriorly, rounded at the apex. Mandibles bidentate. Maxillary palpi six-, labial four-jointed. Head broader than prothorax; antennæ long, about equal in length to the abdomen, stout and of about even thickness throughout. Prothorax rather short, median segment very short and obliquely truncate from the base. Abdomen of moderate length, a little broader at the third and fourth segments than elsewhere, first segment narrowed to the base. Epipygium broadly truncate at the apex, with a triangular, longitudinally striated prominence at the base. Hypopygium widely and deeply emarginate at the apex, leaving a spine on each side, but without a central apical spine. The second recurrent nervure is interstitial with the second transverse cubital nervure.

Saussure, with doubt, followed by Ashmead, gives the mandibles as tridentate. This is incorrect. I am very doubtful as

to the correct position of this genus, which in some respects shows a relationship to typical *Thynnus*. But until the female is known it cannot be located with any certainty.

O. XANTHOSPILUS Shuckard.

Oncorhinus xanthospilus Shuckard, in Grey's Journ. of two Expeditions to N.W. and W. Australia, ii. p.471, n.34, 1841(♂).

♂. Black; the clypeus, mandibles, a narrowly interrupted line on the anterior margin of the prothorax, the tegulæ, the tibiæ and tarsi, the femora at the apex and a spot on each side of each of the abdominal segments, except the epipygium, yellow. The whole insect closely and finely punctured. Wings hyaline, nervures black. A small yellow spot on the mesopleuræ. Length 28mm.

Hab.—Albany, Swan River, W.A.

A specimen marked "from Shuckard's collection, almost certainly the type," is in the British Museum.

The female is unknown, but it may possibly prove that *Thynnus gravidus* Westw., will be found to belong to this species, both showing a want of close affinity to other species, and both being of rather unusual size. *T. gravidus* does not seem to be the female of *T. klugii* Westw., as Westwood suggests.

Genus RHAGIGASTER Guér.

Rhagigaster Guér., Voy.Coq.Zool.ii p.213,(1830)1839; Westw., Arc. Ent. ii. 2, p.105, 1844; Sauss., Reise d. Nov. Zool. ii. 1, Hym. p.111, 1867.

♂. Clypeus with a Λ -shaped carina. A transverse carina between the eyes. Maxillary palpi six-jointed, the basal joint short, the others subequal, the labial palpi four-jointed, the labrum transverse, short, sharply narrowed but not truncate posteriorly. Epipygium usually narrow, hypopygium ending in a long recurved aculeus, with or without a spine on each side near the base. Mandibles bidentate.

♀. Head rectangular, with a sulca on each side from the eye to the occiput. Maxillary palpi small but perfect, six-jointed,

labial palpi four-jointed. Mandibles bidentate or simple. Pygidium usually simple, but sometimes the epipygium is narrowly produced at the apex, with two parallel longitudinal carinae on the disc. Type, *R. unicolor* Guér.

Key to the Species of Rhagigaster.

♂♂. i. Head transverse, not large.

A. Hypopygium tridentate.

a. Apical aculeus produced very much beyond the lateral spines, which are very short.

a². With a shining triangular space on the clypeus. Entirely black.

a³. Angles of the prothorax not prominent.

a⁴. The shining space on the clypeus very sparsely punctured. *R. unicolor* Guér.

b⁴. The shining space on the clypeus more strongly punctured. *R. unicolor* st. *mandibularis* Westw.

b³. Angles of the prothorax prominent.

R. unicolor st. *ephippiger* Guér.

b. Lateral spines of the hypopygium long.

a². Abdomen shallowly and sparsely punctured. Wings fusco-violaceous.

a³. Second recurrent nervure received by the third cubital cell close to the base.

a⁴. Median segment truncate, sparsely punctured.

R. auriceps, n.sp.

b⁴. Median segment subtruncate, strongly punctured.

R. fuscipennis, Sm.

b³. Second recurrent nervure received at some distance from the base of the third cubital cell.

R. approximatus, n.sp.

b². Abdomen closely and finely punctured. Wings subhyaline.

R. crassipunctatus, n.sp.

B. Hypopygium without lateral spines.

a. Scutellum truncate at the apex.

a². Wings fulvo-hyaline. Robust. *R. fulcipennis*, n.sp.

b². Wings hyaline. Slender. *R. elongatus*, n.sp.

b. Scutellum subacute at the apex.

a². Wings fusco-hyaline. *R. gracilior*, n.sp.

ii. Head large.

A. Prothorax produced at the anterior angles.

a. Head not produced behind the eyes. Epipygium broadly rounded. *R. obtusus* Sm.

- b. Head produced behind the eyes, very large. Epipygium narrowly rounded. *R. reflexus* Sm.
- B. Prothorax not produced at the lateral angles. Smooth and shining.
- a. Hypopygium without lateral spines. *R. levigatus* Sm.
- b. Hypopygium strongly tridentate. *R. neptunus*, n.sp.
- ♀ ♀. i. Head nearly square, with a very narrow sulca on each side, reaching from the eye to the occiput.
- A. Thorax and median segment without lateral depressions.
- a. Median segment not concavely hollowed.
- a². Epipygium broad at the base, shortly and bluntly produced to the apex, with a slight median sulca at the apex.
- a³. Black, head with two large ochreous maculæ on the front. *R. unicolor* Guér.
- b³. Black, head with two large ferruginous maculæ on the front, mesothorax and median segment ferruginous. *R. unicolor* st. *mandibularis* Westw.
- c³. Black, the metathorax and median segment ferruginous. *R. unicolor* st. *ephippiger* Guér.
- b². Epipygium narrowly produced, with two subparallel longitudinal carinæ on the disc.
- a³. First abdominal segment short, vertically truncate at the base. Thorax black. *R. fuscipennis* Sm.
- b³. First abdominal segment longer, narrowed to the base, where it is concavely truncate. Thorax red. *R. auriceps*, n.sp.
- c². Epipygium gradually narrowed to the apex.
- a³. First abdominal segment produced above at the base over the apex of the median segment. *R. gracilior*, n.sp.
- b. Median segment concavely depressed from near the base.
- a². The depression of the median segment very slightly concave.
- a³. Prothorax fairly long. *R. fulvipennis*, n.sp.
- b². The depression of the median segment strongly concave.
- a³. Prothorax very short. *R. approximatus*, n.sp.
- B. Thorax or median segment with a depression on each side.
- a. Median segment with a very shallow depression on each side.
- a². Epipygium narrowly produced, with two subparallel carinæ on the disc. *R. crassipunctatus*, n.sp.
- b². Prothorax with a deep depression on each side near the posterior margin. *R. anulis* Westw.
- ii. The sulcæ on the head enlarged into broad, shallow depressions.
- A. Thorax without depressions.
- a. Pygidium simple. *R. levigatus* Sm.

RHAGIGASTER UNICOLOR Guér.

R. unicolor Guér., Voy. Coq. Zool. ii. 2, p.214, 1830(1839), ♂.

R. binotatus Westw., Arc. Ent. ii. 2, p.105, 1844,(♀).

R. binotatus Sauss., Reise d. Nov. Zool. ii. 1, Hym. p.111, 1867,(♂♀).

This is the Sydney form of this widely ranging species. The male has the prothorax narrowed in front, the anterior lateral angles not at all prominent. The carina at the base of the clypeus is well developed and branches near the base, the branches not quite reaching the anterior margin. The clypeus between the branches is shining, sparsely punctured. The wings are more strongly suffused with violet than in the southern forms.

The female has the head longer than wide, slightly rounded at the posterior angles, and the median segment is rather long and not very strongly broadened from the base to the apex. The whole insect is black, except two large luteous spots on the front, which are often confluent. Sometimes the legs are fuscous.

Hab.—Sydney.

R. UNICOLOR Guér. st. MANDIBULARIS Westw.

Rhagigaster mandibularis Westw., Arc. Ent. ii. 2, p.105, 1844 (♂♀); Sauss., Reise d. Nov. Zool. ii. 1, Hym. p.111(♂).

The male differs very slightly from the typical *R. unicolor*, but has the anterior margin of the prothorax more raised and the lateral angles slightly prominent. The shining space on the clypeus, between the carinae, is more strongly punctured.

The female has the head as broad as long, the posterior margin almost straight, the median segment strongly broadened from the base to the apex, and the spots on the front are ferruginous-red, as are also the mesothorax, median segment, and coxae.

Hab.—Liverpool, Shoalhaven, Mittagong, N. S.W.; Gippsland, Vic.

Saussure gives Sydney as a locality, but I think he is probably mistaken, though the form occurs a little to the west.

R. UNICOLOR Guér. st. EPHIPPIGER Guér.

Diamma ephippiger Guér., Voy. Coq. Zool. ii 2, p.235, 1830 (1839) ♀.

Rhagigaster aethiops Sm., Descr. n.sp. Hym. p.175, n.1, 1879(♂).

Thynnus überhorstii D.T., Cat. Hym. viii. 117, 1897(♂).

The male has the anterior lateral angles of the prothorax strongly developed, the carinae on the clypeus much less prominent than in the typical *unicolor*, and the mesothorax and scutellum more strongly punctured. The wings are hyaline or very slightly tinged with violet.

The female has the head as broad as long, as in *mandibularis*, but it is narrower on the posterior margin. The mesothorax is slightly broader than in *mandibularis* and the median segment shorter and rather wider at the base. The spots on the head are almost or quite absent, and the mesothorax, median segment and the whole of the legs are ferruginous-red.

Hab.—Melbourne, Vic. ; Kangaroo Island, Adelaide, S.A. ; Albany, W.A.

I do not consider these forms sufficiently distinct to warrant full specific rank, and so have retained them only as geographical races.

R. FUSCIPENNIS Sm

Rhagigaster fuscipennis Sm., Descr. n.sp. Hym. p.175, n.2, 1879(♂).

♂. Clypeus finely punctured, with a median carina branching before the centre, the branches reaching the anterior margin. A carina rounded at the apex between the antennae, and another, transverse and undulating between the eyes, below the anterior ocellus. Head narrowed posteriorly, strongly punctured. Thorax and scutellum coarsely punctured, the prothorax narrowed anteriorly, the anterior margin slightly raised; the scutellum narrowly truncate at the apex. Median segment strongly punctured at the base, depressed and more finely punctured at the apex. Abdomen sparsely punctured above; segments 2-5 with an impressed transverse line near the base and a slightly raised

smooth space on the sides just before the apical margin, the base of the segments very finely punctured. Abdomen beneath strongly punctured. Epipygium rugulose, smooth and with a median carina and recurved margins at the extreme apex, which is narrowly rounded. Hypopygium tridentate, carinate beneath. Entirely black, wings fusco-violaceous.

♀. Head nearly rectangular, longer than broad, rounded at the posterior angles, with scattered shallow punctures, and a short median frontal sulca; a narrow space above the base of the antennæ longitudinally rugulose, a strong lateral sulca almost touching the inner margin of the eye and extending thence almost to the posterior margin of the head. A few scattered ferruginous hairs, especially near the posterior angles. Thorax with a few shallow punctures, prothorax slightly narrowed anteriorly; median segment obliquely truncate, as broad at the apex as long. First abdominal segment vertically truncate anteriorly, short, sparsely punctured, second segment slightly constricted near the base, the punctures on segments 3-5 closer and more elongate; pygidium rugulose at the base, sharply narrowed posteriorly into a very narrow process slightly widened at the apex, the surface of the process smooth with recurved margins or marginal carinæ. A row of golden hairs projecting from the sides of the narrow process. Shining black, antennæ with basal joints ferruginous, the apical joints piceous, a luteous mark on the front on each side extending from the inner margin of the eye to above the base of the antennæ, legs dull ferruginous, apical margins of abdominal segments 3-5, and the apex of the pygidium testaceous. Length 9 mm.

Hab.—Mackay, Q. (♂♀ in cop.).

R. APPROXIMATUS, n.sp.

♂. Clypeus with a median carina from the base, branching at the centre, the branches reaching the anterior margin. A V-shaped carina between the antennæ, and another broadly arched between the eyes. Head, thorax, and scutellum punctured, prothorax narrowed anteriorly, with the anterior margin slightly raised;

the scutellum triangular, very narrowly truncate at the apex. Median segment strongly punctured at the base, truncate and very finely punctured-rugulose at the apex. Abdomen rather sparsely punctured, with an impressed transverse line near the base, and a curved elevation strongly emarginate in the costa close to apical margin of segments 2-5. Epipygium rugose, smooth and with a median carina and recurved margins at the extreme apex, which is narrowly rounded. Hypopygium tridentate, carinate beneath, wings fusco-violaceous. The second recurrent nervure is received by the third cubital cell at about one-third of the distance from the base to the apex, not quite close to the base as in other species of the genus. Length 13mm.

♀. Head subquadrate, slightly rounded at the posterior angles, very sparsely punctured, a short median sulca between the antennæ, the space above the base of the antennæ densely punctured, and thinly clothed with fulvous pubescence. An almost straight sulca on each side from the inner margin of the eye to the occiput; and a shallow depressed mark on each side of the vertex, very narrowly separated. Thorax and abdomen sparsely punctured; the thorax short, the median segment obliquely truncated from the base, the surface of the truncation very strongly concave. First abdominal segment vertically truncate anteriorly; epipygium elongate, produced near the base at the sides into strong angles, thence narrowed and produced, the disc narrow, raised at the margins into very slight subparallel carinæ; a tuft of golden hairs on each side at the apex. Black; the legs and antennæ fuscous. Length 9 mm

Hab.—Cairns, Q. (♂♀ in cop.).

The male is very near *R. fuscipennis*, and I should have hesitated to describe it had it been taken without the female, which is quite different, especially in the median segment.

R. AURICEPS, n.sp.

♂. Clypeus with a carina from the base to the middle, thence branching, the branches reaching the anterior margin, the enclosed triangular space narrow and rugose, the sides of the clypeus very

finely punctured. Head finely rugulose on the front, shallowly punctured on the occiput, a transverse slightly arched carina between the eyes, and a carina broadly rounded at the apex between the antennæ. Thorax strongly punctured, most sparsely on the disc of the mesonotum. Scutellum broadly rounded at the apex. Median segment truncate posteriorly, rather sparsely punctured on the basal portion, with a small, smooth, shining mark at the extreme base, densely and finely punctured at the apex. Abdomen sparsely and shallowly punctured, a transverse row of very fine punctures, emarginate in the middle, near the apex of each segment. Epipygium rugose, the extreme apex smooth with a median carina, not reaching the apical margin. Hypopygium strongly tridentate, carinate beneath. Entirely shining black, the pubescence on the sides of the clypeus grey, on the centre of the clypeus and head golden. Wings dark violet-blue, fusco-hyaline at the apex, the nervures black. Length 14 mm.

♀. Head subquadrate, slightly longer than broad, rounded at the posterior angles, but not so much produced posteriorly as in *R. fuscipennis*; head punctured, densely just above the base of the antennæ, sparsely elsewhere. A short median sulca on the front between the antennæ. The lateral sulcæ on the head reaching from the eye to the occiput converge more closely on the occiput than in *R. fuscipennis*. Thorax and median segment shining, sparsely punctured. Abdomen shining, finely punctured, the first segment concavely truncate anteriorly, and with a minute tubercle at the base beneath. Epipygium with a narrow shining median elevation, the margins of which form raised carinæ, the sides of which near the apex are clothed with a few long pale fulvous hairs. Shining black, the mandibles fusco-ferruginous; thorax, median segment and legs bright ferruginous-red, the apex of the pygidium testaceous. Length 9 mm.

Hab.—Cairns, Q. (♂♀ in cop.).

Very near *R. fuscipennis*, from which it differs most markedly in the shape of the median segment in the male and of the first abdominal segment in the female.

R. CRASSIPUNCTATUS, n.sp.

♂. Clypeus with a median carina from the base to beyond the centre, finely punctured and covered with cinereous pubescence. A broadly rounded carina between the base of the antennæ and a transverse one, less distinct than in *R. fuscipennis*, between the eyes. Head densely punctured, more shallowly and sparsely on the occiput than on the front. Thorax and median segment densely punctured; the anterior margin of the prothorax very slightly raised, the median segment narrowly truncate at the extreme apex. Abdomen finely and densely punctured, the punctures at the base of the segments very minute. An impressed transverse line near the base, and a raised smooth mark on each side near the apical margin of segments 2-5. Epipygium rugose. Hypopygium tridentate. Abdomen beneath more sparsely punctured than above. Entirely black, the pubescence cinereous. Wings hyaline faintly tinted with fuscous, nervures fuscous. Length 14 mm.

♀. Head large, rectangular, somewhat broader than long, hardly rounded at all at the posterior angles, a short median frontal sulca, the space between the sulca and the eyes longitudinally rugulose. The long sulcæ from the inner margin of the eye to the occiput approach each other as in *R. auriceps*. The vertex is smooth and the clypeus is narrowly emarginate at the apex. Thorax smooth, the truncation of the median segment finely and densely punctured. Median segment broadened from the base to the apex, with shallow depressions on the sides, leaving a slightly raised central subtriangular space. Abdomen sparsely punctured, the punctures elongate; the first segment short and broad, vertically truncate anteriorly, with a minute tubercle at the base beneath and an oblique triangular truncation at the apex. The epipygium is narrowed before the apex, and has a narrow, smooth, median elevation, the margins of which are raised, forming longitudinal, slightly diverging carinæ. Length 11 mm.

Hab.—Mackay, Q.(♂♀ in cop.).

Allied to *R. fuscipennis* Sm., from which it may be distinguished by the densely punctured abdomen of the male, and the shape of the head and sculpture of the median segment in the female.

R. GRACILIOR, n.sp.

♂. Clypeus longitudinally carinate at the base, the carina branching in the centre, the branches enclosing a triangular space reaching to the apical margin, which is emarginate at the apex. A broadly V-shaped carina between the antennæ, and a transverse frontal carina reaching to the eyes. Clypeus punctured, covered with grey pubescence, fulvous between the carinæ. The space between the frontal carinæ rugulose; occiput shining, with large shallow punctures. Thorax shining, sparsely covered with shallow punctures. Scutellum subacute at the apex. Median segment rounded, densely and finely punctured at the base, delicately reticulate towards the apex, with white pubescence on the sides. Abdomen sparsely punctured, the punctures large and shallow, the base of the segments very delicately punctured, beneath more densely punctured; segments 2-6 above with a depressed transverse line near the base, and a raised space at the sides near the apical margin. Epipygium rugose, rather broadly rounded at the apex. Hypopygium without lateral spines, aculeus with a blunt tooth on the upper surface. Black, the mandibles at the apex, and the legs, excepting the coxæ, obscure fuscous. Wings fusco-hyaline, in some specimens almost hyaline. Length 14 mm.

♀. Head longer than wide, rounded at the posterior angles. Clypeus rugulose; front above the antennæ with fine golden pubescence, densely punctured and with a median sulca. A narrow lateral sulca reaching from the inner margin of the eye to the occiput in an almost straight line, the sulcæ not convergent. Thorax sparsely punctured, median segment only slightly broadened posteriorly. Abdomen sparsely punctured, the first segment longer above than beneath, narrowed from the apex to the base, produced at the base above, overlapping the oblique truncation of the median segment, which is clothed with golden

pubescence. Epipygium without carinæ, with a small tuft of golden hairs on each side near the apex. Length 11 mm.

Shining black, the mandibles, except at the apex, the antennæ and legs, ferruginous.

Hab.—Mackay, Q. (♂♀ in cop.).

R. FULVIPENNIS, n.sp.

♂. Clypeus tumid at the base, with a longitudinal carina from the base to the centre, densely clothed with white pubescence, the pubescence on the middle of the anterior margin fulvous; front coarsely, occiput finely rugulose. A transverse carina between, but not touching the eyes, and another rounded at the apex between the antennæ. Thorax densely punctured, scutellum narrowly truncate at the apex; median segment subtruncate, punctured at the base, finely rugulose at the apex. Pubescence on head and thorax fulvous above, grey beneath. Abdominal segments coarsely punctured, more finely at the base of the segments. The segments beneath thinly fringed with long grey pubescence at the apex. Hypopygium without lateral spines. Black, the mandibles at the apex, scape of the antennæ and legs, except the coxæ, ferruginous. Tegulæ testaceous. Wings flavo-hyaline, nervures ferruginous. Length 16 mm.

♀. Head subrectangular, as broad in front as long, slightly produced posteriorly, smooth and shining, with scattered shallow punctures and a short median frontal suture, a narrow space above the base of the antennæ longitudinally rugose, a strong lateral sulca on each side from near the inner margin of the eye to the occiput, the sulcæ moderately straight as in *R. fuscipennis*. Prothorax gradually narrowed to the anterior margin, which is strongly depressed, finely punctured on the depressed portion, then a narrow rugulose space, then smooth with a few scattered punctures to the posterior margin. Median segment short, oblique truncate posteriorly, the truncation covered with very fine punctures. Abdomen shining, with scattered punctures, first segment short and truncate at the base. Pygidium simple, pointed at the apex. Black; mandibles, clypeus, antennæ, a

spot at the anterior angles of the head on each side and the whole of the legs ferruginous. Length 8 mm.

Hab.—Cape York, Q. (♂♀ in cop.).

R. ELONGATUS, n.sp.

♂. Entirely shining black, with thin, short grey pubescence; femora, tibiæ and tarsi dark fuscous. Very slender. Clypeus with a longitudinal carina from the base to the centre, where it branches widely, densely clothed with pubescence. Front punctured-rugulose, a very faint transverse carina below the anterior ocellus and another rather more distinct and arched a little below it. The interantennal carina very indistinct and broadly rounded at the apex; the occiput sparsely and shallowly punctured. Prothorax punctured, the anterior margin slightly raised; mesothorax and scutellum sparsely punctured, the scutellum rather broadly subtruncate at the apex. Median segment and abdomen sparsely punctured, the median segment rounded and narrowed at the apex. Abdominal segments slightly constricted at the base. Epipygium rugose, depressed, subtriangular, narrowly rounded at the apex. Aculeus projecting shortly beyond the epipygium. Wings hyaline, the forewings washed with fuscous, hindwings iridescent. Length 11 mm.

♀. Unknown.

Hab.—Queensland.

Type in Oxford University Museum, ex Coll. Saunders.

R. ANALIS Westw.

Rhagigaster analis Westw., Arc. Ent. ii. 2, p.106, n.8, 1844(♀).

R. nitidus Sm., Cat. Hym. B.M. vii. p.63, n.16, 1859(♀).

Thynnus demattioi D.T., Cat. Hym. viii. 104, 1897(♀).

Thynnus exneri D.T., Cat. Hym. viii. 106, 1897(♀).

♀. Head much longer than broad; front between antennæ strongly emarginate, with a short median sulca; above the base of the antennæ finely and densely punctured; the remainder of the head sparsely punctured. The lateral sulca from the eye does not reach the occiput, and is straight and shorter than in other species of the genus. Thorax sparsely punctured, the prothorax

with a deep depression on each side close to the posterior margin; median segment only slightly widened from the base to the apex. Abdomen subcylindrical, shining, finely punctured, the first segment vertically truncate at the base, without a tubercle at the base beneath. Pygidium elongate, arcuate, simple, without carinæ and rounded at the apex. Shining black; the mandibles, antennæ, clypeus, a spot on each side between the eye and the base of the antennæ, and the legs, ferruginous; the pygidium bright ferruginous-red. Length 11 mm.

Smith mentions a shallow depression on each side of the median segment, which is scarcely visible though the segment is slightly higher in the middle.

Hab.—Western Australia.

R. REFLEXUS Sm.

Rhagigaster reflexus Sm., Cat. Hym. B.M. vii. p.62, n.12, 1859.

♂. Head very large, clypeus with a short Λ -shaped carina. Lateral angles of the prothorax prominent. Epipygium strongly rugulose, narrowly rounded at the apex. The second recurrent nervure is interstitial with the second transverse cubital nervure. Antennæ short and stout.

♀. Unknown.

Hab.—Swan River, W. A.

R. OBTUSUS Sm.

Rhagigaster obtusus Sm., Cat. Hym. B.M. vii. p.62, n.11.

♂. Clypeus with a short Λ -shaped carina at the base, a transverse carina in front of the anterior ocellus, the prominence between the antennæ rounded at the apex. Epipygium broadly rounded at the apex.

♀. Unknown.

Hab.—Adelaide, S. A.

R. LÆVIGATUS Sm.

Rhagigaster lævigatus Sm., Descr. n. sp. Hym. p.176, n.4, 1879 (♂♀).

♂. The clypeus is carinated, the carina branching just below the base into two, enclosing a triangular space, transversely

rugulose. There is a deep depression at the base of the antennæ, and a median sulca on the prominence between the antennæ. The head is punctured, not narrowed posteriorly. The thorax is smooth with a very few fine and scattered punctures; the prothorax as wide as the head; the scutellum very prominent, its sides and the postscutellum finely punctured and pubescent. Median segment smooth, vertically truncate posteriorly. Abdomen shining, with large shallow punctures, very sparse on the basal segments. First segment truncate at the base, subtubercular above the truncation. Second segment with a tubercle at the base beneath. Epipygium coarsely punctured, carinated in the middle on the apical portion, depressed and slightly produced at the apical margin, with sparse fulvous pubescence. Shining black; tarsi fuscous, spines and ungues ferruginous. Wings fuscous, lighter at apex, brilliantly glossed with purple. Length 25 mm.

♀. Instead of the sulcæ from the eye to the occiput usual in the genus there is a broad longitudinal depression. The clypeus has a median carina.

Hab.—N.W. Australia (Smith); Townsville, Q. (Dodd).

This seems to be a rare species.

R. NEPTUNUS, n.sp.

♂. Head shining, sparsely punctured, more densely above the base of the antennæ; a median frontal sulca from just below the anterior ocellus to the base of the clypeus; clypeus narrow, subtriangular, broadly emarginate anteriorly. Antennæ very short. Thorax highly polished with a few scattered punctures, the prothorax as broad as the head, emarginate in the middle anteriorly; the impressed longitudinal lines on the sides of the mesothorax shallow as in *R. levigatus* Sm.; the scutellum raised, subtriangular, without punctures; median segment short, vertically truncate, with a few scattered punctures. First abdominal segment obliquely truncate anteriorly. All the segments sparsely punctured, except the epipygium, which is deeply and coarsely punctured. Segments 2-6 with a depressed transverse line near

the base, the basal area without punctures. Hypopygium broad at the base with a central recurved aculeus and two long lateral spines. A deep notch beneath between the first and second segments, the tubercle at the base of the first segment very slightly developed, and no tubercle on the basal margin of the second segment: the segments beneath more strongly punctured than above, the two apical segments more finely and densely than the others. Entirely shining black, the wings fuscous flushed with violet, the nervures black. Length 16 mm.

Hab.—Port Essington.

Type in Oxford University Museum, ex Coll. Shuckard.

Near *R. laevigatus* Sm., but differs by the tridentate hypopygium, the absence of a tubercle at the base of the second abdominal segment beneath, the narrower clypeus and more triangular scutellum.

From beyond Australia one true *Rhagigaster* has been described.

RHAGIGASTER NOVARÆ SAUSS.

Rhagigaster novaræ Sauss., Reise d. Nov. Zool. ii. 1, Hym. p. 112, 1867.

Thynnus heideri D.T., Cat. Hym. viii. 108, 1897.

Hab.—New Zealand.

Apparently allied to *R. unicolor* Guér.

Other species which have been assigned to *Rhagigaster*, but which I do not place either in *Rhagigaster* or in the allied genera *Rhytidogaster* or *Enteles* are:—

R. illustris Kirby (Horn Exped. Pt. 1, 1898) ♂.

R. flavifrons Sm. (Trans. Ent. Soc. London (3), ii. 5, p. 390, 1865) ♀.

R. clypeatus Sm. (Descr. n. sp. Hym. 177, 1879) [♂] identical with *Thynnus coelebs* Sauss. (♀), and with *Thynnus clypearis* Sauss. (♂♀).

Bethylus apterus Fab. (Syst. Piez. p. 238, ♀) is placed by Westwood in this genus; but I do not think "abdomen pilosum" could be applied to any *Rhagigaster*.

Genus RHYTIDOGASTER, n.g.

♂. Very near *Rhagigaster*, from which it may be distinguished by the absence of the well defined frontal carina between the eyes and by the absence of the long Λ -shaped carina on the clypeus. Hypopygium without lateral spines.

♀. Head without lateral sulcæ, mandibles never bidentate, maxillary palpi imperfect, four-jointed. Pygidium simple. Tarsal ungues simple, not bifid. Abdomen usually cylindrical. Corresponds to Saussure's *Rhagigaster* Sections B and C. The difference between the females and those of the true *Rhagigaster* seems sufficient to justify their separation, though the males are very near.

Type *Rhagigaster aculeatus* Sauss.

Key to the Species of *Rhytidogaster*.

♂ 3. i. Median segment rounded.

A. Prothorax produced at the anterior angles.

a. Wholly black. Clypeus without a prominent tubercle.

a². Epipygium rounded at apex.

a³. Apical margins of epipygium reflexed. *R. alexius*, n.sp.

b³. Apical margins of epipygium not reflexed. *R. tristis* Sm.

b². Epipygium truncate at the apex.

a³. Epipygium very narrowly truncate, with a spine on each side near the base. *R. denticulatus*, n.sp.

b³. Epipygium more broadly truncate, without lateral spines. *R. bidens* Sauss.

b. Clypeus with an acute prominent tubercle near base.

a². Wholly black. *R. cornutus*, n.sp.

c. Two apical abdominal segments red.

a². Clypeus with a smooth subtriangular space at the apex enclosed by a carina. *R. iracundus*, n.sp.

b². Clypeus with a triangular oblique truncation at the apex.

a³. Tibiæ and tarsi ferruginous-red. *R. comparatus* Sm.

b³. Legs entirely black. *R. tumidus*, n.sp.

d. Mesopleuræ red. *R. pugionatus* Sauss.

e. Abdomen ferruginous, sometimes marked with black on the disc of the segments. *R. aculeatus* Sauss.

ii. Median segment obliquely truncate.

A. Prothorax produced at the anterior angles.

a. Prothorax strongly emarginate anteriorly.

a². Wholly black. *R. consanguineus*, n.sp.

- b. Prothorax not emarginate.
*a*². Two apical segments red. *R. pinguiculus*, n.sp.
- B. Prothorax not produced at the anterior angles.
a. Prothorax truncate anteriorly.
*a*². Black, prothorax and mesopleuræ red. *R. prothoracicus*, n.sp.
*b*². Black, abdomen except basal segment ferruginous.
R. breviusculus, n.sp.
- ♀ ♀. i. With a depression on each side of the prothorax near the posterior margin.
- A. Median segment without a carina.
a. Median segment trapezoidal, much broadened to the apex.
*a*². Black; the mesothorax, median segment, legs and pygidium ferruginous. *R. pugionatus* Sauss.
*b*². Wholly castaneous. *R. aculeatus* Sauss.
- b. Median segment subcylindrical, very little broadened to the apex.
*a*². Black, the legs and margins of the abdominal segments testaceous-brown. *R. tumidus*, n.sp.
- B. Median segment carinated.
a. The carina very slightly developed.
*a*². The depression on the prothorax slight and only on the posterior margin. *R. denticulatus*, n.sp.
*b*². The depressions large, almost reaching anterior margin.
R. prothoracicus, n.sp.
- b. Carina very prominent.
*a*². Prothorax rounded anteriorly. *R. breviusculus*, n.sp.
*b*². Prothorax with the anterior angles prominent and toothed
R. alexius, n.sp.
- ii. Without depressions on the prothorax.
- A. Head narrow, much longer than wide.
a. Wholly castaneous. *R. bidens* Sauss.
- B. Head subquadrate, slightly longer than wide.
a. Shining, abdomen finely punctured.
*a*². Light ferruginous; head, mesothorax and disc of abdominal segments black. *R. consanguineus*, n.sp.
- b. Opaque, abdomen longitudinally rugulose.
*a*². Antennæ, legs and two apical abdominal segments ferruginous. *R. comparatus* Sm.
- c. The truncation of the median segment concave.
*a*². Wholly castaneous. *R. castaneus* Sm.

R. ALEXIUS, n.sp.

♂. Clypeus densely clothed with white pubescence; head punctured, a carina between the antennæ broadly rounded at the

apex. The anterior margin of the pronotum raised with a groove behind the elevation, broadly emarginate. The thorax punctured, the mesothorax and scutellum most coarsely. Median segment punctured, rounded to the apex. Abdominal segments shallowly punctured; a transverse impressed line, with a row of fine punctures on the basal side of it, near the base, and a raised mark on each side near the apical margin of segments 2-6. Epipygium deeply punctured, the apical margins strongly recurved. Entirely black, with white pubescence. Wings hyaline, primaries faintly fusco-hyaline on the apical third, secondaries iridescent. Length 8-10 mm.

♀. Head quadrate, as broad as long, slightly rounded at the posterior angles, densely and finely punctured, with thin cinereous pubescence, a deep semicircular depression on the middle of the posterior margin. Prothorax short, broader than long, with the anterior lateral angle on each side produced into an acute spine, and a depression on each side of the posterior margin, extending on to the mesothorax. The mesothorax raised in the middle into a rounded subtubercular elevation. Median segment rather short, broadened to the apex, where it is almost vertically truncate, with a broad median carina, and the margins of the segment raised, leaving a deep depression on each side of the median carina. The thorax and median segment shining, sparsely and finely punctured. Abdomen subcylindrical, finely and densely punctured, the punctures on the apical half of each segment elongate. The second and third segments are more densely punctured than the others and are thinly clothed with fine pubescence on the apical half, giving an appearance of longitudinal striae. Epipygium elongate, strongly deflexed to the apex, with a very slender acute spine at the side near the base, the lateral margins on the apical half of the segment raised into carinae, the space between them longitudinally striated to the apex, which is narrowly rounded. Black; antennae, mandibles, legs and abdomen chestnut-brown. Length 6-8 mm.

Hab.—Cape York, Q. (♂♀ in cop.).

R. TRISTIS Sm.

Rhagigaster tristis Sm., Cat. Hym. B.M. vii. p.63, n.13, 1859(♂).

* *Thynnus hammerlei* D.T., Cat. Hym. viii. 108, 1897(♂).

The clypeus has a very short carina from the base, then branching, the space between the branches smooth and shining. A very faint V-shaped carina between the antennæ. Head, thorax and median segment punctured-rugose, most coarsely on the mesothorax and scutellum; the prothorax with the anterior angles slightly prominent; the scutellum narrowly truncate at the apex. Abdomen slender, rugulose, segments 2-5 with a depressed transverse line at the base and a smooth, polished, raised mark on each side near the apical margin. Epipygium coarsely punctured at the base, smooth and rounded at the extreme apex. Black; wings hyaline, iridescent, nervures black. Length 11 mm.

♀. Unknown.

Hab.—Western Australia.

R. DENTICULATUS, n.sp.

♂. Clypeus densely clothed with grey pubescence, with a median carina from the base to the apex. Head rugulose, finely punctured on the occiput. Prothorax rugose, moderately produced at the anterior angles; mesothorax and scutellum coarsely rugose. Median segment very densely punctured, obliquely depressed to the apex. Abdominal segments punctured, with a depressed transverse line near the base and a raised mark on each side near the apical margin of segments 2-5. Epipygium rugose, with a spine on each side near the base, the apex narrowly truncate. Entirely black, legs fuscous. Wings fusco-hyaline, slightly iridescent. Length 11 mm.

♀. Head much longer than broad, rectangular, shining, sparsely punctured. Prothorax very faintly punctured, with a depression on each side, broad and deep on the posterior margin, reaching nearly half-way to the anterior margin, but becoming narrower and less deep. Median segment more strongly punctured, with a faint median longitudinal carina, obliquely truncate at the apex,

broadened from the base. Abdominal segments densely covered with elongate punctures. Pygidium narrow and strongly deflexed at the apex. Abdomen cylindrical. Length 7 mm.

Hab.—Mackay, Q. (♂♀ in cop.).

R. BIDENS Sauss.

Rhagigaster bidens Sauss., *Reise d. Nov. Zool.* ii. 1, Hym. p. 112, n. 3, 1867 (♂).

Thynnus semperi D.T., *Cat. Hym.* viii. 115, 1897.

Saussure's description of the male is sufficient. It is a much smaller species than *Rhagigaster unicolor* Guér., and of an opaque black with subfuscous wings; the sculpture is also very different.

♀. Head rectangular, much longer than broad, deeply but rather sparsely sculptured, not very much broader than the prothorax. Prothorax narrowed anteriorly, as broad on the anterior margin as long; mesothorax small, much narrowed posteriorly. Median segment as long as the prothorax, broadened posteriorly and obliquely truncate; thorax and median segment rather shallowly punctured. Abdomen cylindrical, thickly covered with elongate punctures, which are deeper and larger on the three basal than on the apical segments. Pygidium narrowly truncate at the apex. Entirely castaneous. Length 10 mm.

Hab.—Sydney (Coll. Froggatt).

R. CORNUTUS, n.sp.

♂. Clypeus slightly emarginate at the apex, with a longitudinal carina from the base, which terminates in the middle of the clypeus in a very prominent acute tubercle. A V-shaped carina between the antennæ, but no transverse frontal carina. Front strongly, occiput more finely punctured. Thorax strongly and densely, median segment rather more finely punctured and rounded posteriorly. First abdominal segment with a median sulca from the base not reaching the apex; segments 2-5 with a strongly depressed line near the base, and the sides raised near the apical margin forming an emarginate carina almost obsolete

in the centre. The segments finely punctured at the base, more strongly and sparsely near the apex, the two apical segments coarsely punctured. Entirely black; wings hyaline, nervures fuscous, a slight fuscous cloud in the radial cell. Length 11 mm.

Hab.—Australia. Type in British Museum.

Easily distinguished by the prominent tubercle on the clypeus.

R. CASTANEUS Sm.

Rhagigaster castaneus Sm., Cat. Hym. B.M. vii. p.63, n.15, 1859(♀).

Head quadrate, the front longitudinally rugulose, pubescent; the occiput finely and sparsely punctured, without a sulca between the antennæ. Thorax short, the prothorax rather broader than long, punctured sparsely. Median segment short, broadened posteriorly, obliquely truncate, the surface of the truncation concave. Abdomen subcylindrical, finely punctured, the epipygium longitudinally rugulose, rounded at the apex. Entirely castaneous-brown. Length 8 mm.

Hab.—Australia.

R. PUGIONATUS Sauss.

Rhagigaster pugionatus Sauss., Reise d. Nov. Zool. ii. 1, Hym. p.113, 1867(♂).

Thynnus scalæ D.T., Cat. Hym. viii. 115, 1897(♂).

Saussure's description of the male is good. A Tasmanian specimen in my collection is 13 mm. in length.

♀. Head rectangular, a little longer than wide, densely and coarsely punctured, the punctures often confluent, the posterior angles of the head rounded. Prothorax much narrower than the head, narrowed and rounded anteriorly, sparsely punctured, with shallow depressions on the sides near the posterior margin. Mesothorax much broader anteriorly than posteriorly, sparsely punctured with a median, longitudinal, impressed line. Median segment obliquely truncate posteriorly, only half as wide at the base as at the apex, sparsely punctured, the surface of the truncation finely and closely punctured. Abdomen subcylindrical,

coarsely punctured, the punctures elongate, thinly clothed with cinereous pubescence on the sides. Epipygium narrow, deflexed, longitudinally rugulose, rounded at the apex. Black; the antennæ, mandibles at the apex, mesothorax and median segment, and the apex of the pygidium, fuscous; legs dull ferruginous. Length 11 mm.

Hab.—Tasmania.

Specimens from Sydney are much smaller, the male being 10 mm. in length and the female 7 mm. only. The fuscous parts of the Tasmanian female are bright ferruginous in a Sydney specimen, as is also the prothorax.

R. ACULEATUS Sauss.

Rhagigaster aculeatus Sauss., Reise d. Nov. Zool. ii. 1, Hym. p. 113, 1867 (♂).

Saussure's description is good. The colour varies as to the extent of the black bands on the abdominal segments, which are sometimes wholly black above and sometimes ferruginous.

♀. Unknown.

Hab.—Sydney, Mittagong, N.S.W.; Victoria.

R. ACULEATUS st. ACUTANGULUS, n st.

♂. Differs from the typical form in having the sides of the prothorax nearly parallel and the anterior angles sharply produced. The abdomen is wholly ferruginous except the apical segment, which is black. Length 11 mm.

♀. Head rectangular, much longer than wide, shining, with a few minute scattered punctures. Sides of the prothorax parallel, a small depression on each side of the prothorax near the posterior margin. Thorax and median segment sparsely and finely punctured, median segment as long as the prothorax, twice as broad at the apex as at the base, without a median carina. Abdomen cylindrical, finely and sparsely punctured. Pygidium rounded at the apex. Entirely shining castaneous-brown. Length 7 mm.

Hab.—S. Australia. In British Museum collection.

R. BREVIUSCULUS, n.sp.

♂. Head and thorax rugose, the clypeus with a very short carina from the base; antennæ very short. The prothorax is narrowed anteriorly, not produced at the angles. Scutellum short, subtriangular, with a faint carina at the apex. Median segment strongly punctured at the base, obliquely truncate and reticulate at the apex, a faint median carina from the base to the truncation. Abdominal segments closely and very finely punctured, the basal segment and epipygium coarsely punctured. A transverse depressed line near the base and a raised mark on each side near the apical margins of segments 2-5, the extreme apical margins of the segments smooth. Epipygium very narrowly truncate at the apex. Black, opaque, with grey pubescence, the abdomen, except the basal segment, ferruginous. Wings hyaline, faintly iridescent, nervures dark fuscous. Length 10 mm.

♀. Head subrectangular, longer than broad, somewhat rounded at the posterior angles, with elongate confluent punctures and sparse pubescence. Prothorax narrow anteriorly, about the same length at the median segment, with a depression on each side on the posterior margin. Median segment with a broad central carina, the lateral margins slightly raised; obliquely truncate posteriorly. The thorax and median segment sparsely punctured. Abdomen long and cylindrical, delicately longitudinally rugulose. Epipygium pointed, with a delicate median carina. Entirely chestnut-brown, the legs testaceous. Length 7 mm.

Hab.—Mackay, Q. (♂♀ in cop.).

Near *R. aculeatus* Sauss., in general appearance. The form of the median segment and the delicate sculpture of the abdomen are the most marked distinctions in the male. The female differs much from that of the S. Australian form by the prominent carina of the median segment and the sculpture of the abdomen.

R. TUMIDUS, n.sp.

♂. Clypeus tumid, with a faint short carina close to the base, thinly clothed with cinereous pubescence. Head closely punc-

tured, most shallowly on the occiput. Prothorax with the anterior margin straight, the lateral angles very slightly produced. Thorax closely punctured, scutellum rounded at the apex. Median segment very densely and more finely punctured, rounded at the apex. Abdominal segments shallowly punctured, smooth at the base, with a depressed transverse line near the base. Epipygium subtriangular, very narrowly truncate at the apex. Black; the two apical abdominal segments ferruginous-red. Wings hyaline, nervures fuscous. Length 11 mm.

Hab.—Melbourne, Vic.; Swan River, W.A.; Tempe, N.S.W.

This is the species identified by Smith as *Rhagigaster hæmorrhoidalis* Guér., which name, I consider, applies to *R. apicalis* Sm., the male of *Euteles bicolor* Westw.

♀. Head rectangular, slightly rounded at the posterior angles, longer than broad, broader than the thorax, shining, sparsely and shallowly punctured. Prothorax and median segment finely and rather sparsely punctured; the prothorax narrowed and rounded anteriorly, with a small depression on each side close to the posterior angle; median segment rather longer than the prothorax, slightly broadened from the base, obliquely truncate. Abdomen cylindrical, more densely punctured, the punctures confluent. Pygidium pointed. Black; the legstestaceous; antennæ, mandibles and margins of the abdominal segments fusco-ferruginous. Length 5 mm.

R. IRACUNDUS, n.sp.

♂. Clypeus with a prominent carina enclosing a heart-shaped space, which is smooth and shining. Head and thorax punctured, rugose; an obscure carina between the antennæ; the anterior angles of the prothorax very slightly prominent. Median segment finely and densely punctured, rounded posteriorly. Abdomen finely and shallowly punctured, segments 2-5 with a smooth raised mark on the sides near the apical margin and a transverse impressed line near the base of the segments. Epipygium trian-



gular, pointed at the apex. Black; the two apical abdominal segments red. Wings hyaline, nervures fuscous. Length 12-15 mm.

♀. Unknown.

Hab.—Melbourne, Vic.(French).

R. COMPARATUS Sm.

Rhagigaster comparatus Sm., Cat.Hym.B.M.vii.p.69, 1859(♂♀).

Rhagigaster rugosus Sm., Descr.n.sp.Hym.p.176, 1879(♂nec♀).

♂. The clypeus is carinated at the base, the head and thorax very coarsely rugose, the prothorax and median segment more finely so. The median segment is rounded at the apex. Abdominal segments very finely rugulose, smooth at the base. The tibiæ and tarsi and two apical abdominal segments ferruginous-red. Length 10 mm.

♀. The head is rectangular, longer than broad; head and thorax punctured, the punctures elongate and confluent; the prothorax almost square, shorter than the median segment, which is broadened to the apex and obliquely truncate, the whole abdomen longitudinally rugulose, the pygidium simple, rounded at the apex. Antennæ, legs, and two apical abdominal segments ferruginous. Length 7 mm.

Hab.—Adelaide, S.A ; Melbourne, Vic.

Much more coarsely sculptured than in the allied species, and may also be distinguished by the colour of the legs in the male.

The female described by Smith as that of *rugosus* is almost certainly wrongly paired by the collector, and does not belong to this section of the family.

R. PINGUICULUS, n.sp.

♂. Clypeus with a median carina from the base to the centre, where it is widely branched, the apex narrowly emarginate. The carina between the antennæ faint and broadly rounded. Front rugose, occiput strongly punctured. Thorax and median segment at the base coarsely rugose, the median segment short and vertically truncate, the surface of the truncation finely reticulated. Abdomen densely punctured, the apical margins of the segments

smooth, the base constricted. Epipygium more coarsely punctured, narrowly truncate at the apex. The abdomen is shorter and broader than in others of the genus. Black, the two apical segments of the abdomen ferruginous-red; mandibles at the apex, fore tibiæ and tarsi, the calcaria and tarsal ungues, and the apical margins of the five basal abdominal segments fuscous. Wings hyaline, slightly iridescent, nervures black. The clypeus and the sides of the thorax and abdomen with grey pubescence. Length 13 mm.

♀. Unknown

Hab.—Mackay, Q.

R. PROTHORACICUS, n.sp.

♂. Head densely and finely punctured, more sparsely and very finely on the occiput, clypeus clothed with white pubescence, without a carina. Thorax densely and strongly punctured, the prothorax narrowed anteriorly, the angles not produced; the scutellum rounded at the apex. Median segment short, truncated posteriorly, more finely punctured, with long white pubescence on the sides. Abdomen densely and finely punctured, segments 2-5 with a depressed transverse line near the base and a raised mark on each side near the apical margin. Epipygium coarsely rugose, very narrowly truncate at the apex, with a short spine on each side near the base. The aculeus of the hypopygium has an acute spine on the upper surface close to the base. The carina beneath the hypopygium not prominent. Black; the prothorax and mesopleuræ ferruginous-red, the tegulæ dark testaceous, the tarsal ungues testaceous. Wings hyaline, very slightly clouded in the radial cell. Length 11 mm.

♀. Head rectangular, longer than broad, the posterior angles not rounded, densely punctured, clothed with pale fulvous pubescence. Prothorax smooth, rather short, very little narrowed anteriorly, a deep depression on each side, broad on the posterior margin, but not reaching the anterior margin, the lateral margins elevated. Median segment rather sparsely punctured, with a median carina and slightly depressed on the sides, broadened

posteriorly and obliquely truncate. Abdomen cylindrical, finely longitudinally rugulose. Pygidium narrow, arched. Chestnut-brown, the three apical abdominal segments rather darker. Length 8 mm.

Hab.—Mackay, Q (♂♀ in cop.).

R. CONSANGUINEUS, n.sp.

♂. Clypeus with a shining, subpunctured, triangular area, enclosed by slightly raised carinæ. Head without frontal carinæ, densely punctured. Prothorax shallowly punctured, the anterior margin raised with the lateral angles prominent, broadly emarginate. Mesothorax and scutellum strongly punctured, the scutellum narrowly truncate at the apex. Median segment short, obliquely truncate posteriorly, finely rugulose. Abdominal segments strongly punctured, constricted near the base, the epipygium subtriangular, very coarsely punctured. Beneath the segments are marked with a depressed transverse line near the middle, the basal portion finely, the apical strongly punctured. Entirely shining black, with sparse grey pubescence. Length 11 mm.

♀. Head subquadrate, smooth; prothorax smooth, with a very few fine punctures, rather broader posteriorly than anteriorly, longer than wide. Median segment as long as the prothorax, broadened to the apex, sparsely and finely punctured. Abdomen cylindrical, shining, very finely punctured. Epipygium rounded, with a slight depression on each side near the base, the margins slightly raised. Shining black; the prothorax, median segment, antennæ and legs ferruginous; the margins of the abdominal segments and the whole of the apical segment testaceous. Length 7 mm.

Hab.—Albany, W.A. Types in Oxford University Museum, ex Coll. Saunders.

Genus ENTELES Westw.

Enteles Westw., Arc. Ent. ii. 2, 143, 1844.

♂. Very closely resembles *Rhagigaster*, from which it may be distinguished by the broadly rounded or truncated epipygium.

The labrum is almost semicircular, truncate posteriorly, and borne on a short petiole. The labial palpi are four-jointed, the maxillary six-jointed, the joints not differing much in length. The hypopygium has no lateral spines at the base.

♀. The female has the maxillary palpi small, but six-jointed, the labial palpi four-jointed, also small. The mandibles are simple; the head is small, slightly convex. The median segment is short, obliquely truncate; the second abdominal segment is transversely carinated or striated, the number of the carinæ being about seven. The pygidium is broad, obliquely or vertically truncate and longitudinally striated.

The males and females in this group present most unexpected differences, the females closely resembling in appearance those of *Thynnoides*, and only showing a likeness to *Rhagigaster* in the structure of the palpi, though the males have always been placed in that genus without hesitation by previous authors; but Saussure places *E. morio* in a division of the genus by itself.

Type *E. hæmorrhoidalis* Guér.

Key to the Species.

- ♂♂. i. Abdominal segments without a close marginal band of pubescence at the base and apex.
- A. Black, the two apical segments ferruginous-red.
- a. Prothorax rugose.
- a². Mesopleuræ black. *E. hæmorrhoidalis* Guér.
- b². Mesopleuræ red. *E. similimus* Sm.
- b. Prothorax transversely striated. *E. conjugatus*, n.sp.
- B. Black, the abdomen wholly ferruginous.
- a. Abdomen and legs bright ferruginous-red. *E. dimidiatus* Sm.
- b. Abdomen fusco-ferruginous, legs testaceous-yellow. *E. testaceipes*, n.sp.
- C. Abdomen wholly black.
- a. Mandibles strongly bidentate.
- a². Wings fusco-violaceous, legs ferruginous. *E. morio* Westw.
- b. Mandibles almost falcate.
- a². Entirely black, wings hyaline, of small size. *E. barnardi*, n.sp.
- ii. Abdominal segments with a close marginal band of pubescence at the base and apex.
- a. Prothorax with transverse striæ.
- a². Entirely black. *E. integer* Fab.

b. Prothorax rugose.

α². Abdomen dull ferruginous.

E. deceptor Sm.

♀ ♀. A. Apex of the first abdominal segment with long white pubescence.

a. Thorax and median segment ferruginous-red.

E. hæmorrhoidalis Guér.

B. First abdominal segment without pubescence.

a. Two apical abdominal segments ferruginous-red.

E. dimidiatus Sm.

b. Black, the legs testaceous.

E. morio Westw.

ENTELES HÆMORRHOIDALIS Guér.

Rhagigaster hæmorrhoidalis Guér., Mag. de Zool. xii. 1842(♂); *R. apicalis* Sm., Cat. Hym. B.M. vii. p.63, n.14, 1859(♂); *Thynnus ottonis* D.T., Cat. Hym. viii. 112, 1897(♂); *Enteles bicolor* Westw., Arc. Ent. ii. 2, p.143, 1844(♀); *Thynnus fimbriatus* Sm., Cat. Hym. B.M. vii. p.42, n.91, 1859(♀); *Thynnus zingerlei* D.T., Cat. Hym. viii. 119, 1897(♀); *Thynnus lecheri* D.T., Cat. Hym. viii. 110, 1897(♂).

♂. Head rugose, a transverse undulating carina below the anterior ocellus not reaching the eyes, a V-shaped carina between the antennæ and a short longitudinal frontal carina not touching the transverse carina on the apex of the V-shaped carina. The clypeus with a carina branched very narrowly near the base, the branches not reaching the apical margin, the clypeus raised into a triangular elevation, shining and rugose, finely punctured at the base. Thorax and scutellum coarsely rugose, median segment truncate posteriorly, finely punctured-rugulose. Prothorax with the sides straight and the anterior lateral angles strongly produced. Abdomen moderately punctured, the lateral elevations on segments 2-5 near the apical margin smooth. The depressed lines at the base of the abdominal segments with a little short cinereous pubescence. Epipygium coarsely punctured, broad and very broadly rounded or subtruncate at the apex. Black, the two apical abdominal segments ferruginous-red. Wings hyaline, nervures dark fuscous.

♀. The two carinæ at the apex of the second abdominal segment are much stronger than the five or six near the base; the third segment has a few very fine and obscure short transverse striae near the base. The apical portion of the first segment is depressed and the margin raised so as to form a carina. The median segment is short and truncate. Otherwise Westwood's description is sufficient.

Hab.—Swan River, W.A.; Victoria; Liverpool, N.S.W.

I have not seen Guérin's type, but I think I am correct in my identification, which agrees with Westwood's specimens marked *hæmorrhoidalis*.

E. CONJUGATUS, n.sp.

♂. Clypeus elevated in the centre, narrowly subtruncate anteriorly, coarsely longitudinally rugose, pointed at the base. An interantennal carina broadly rounded at the apex, and a transverse frontal carina, not reaching the eyes, connecting the extremities of the antennal carina, the space enclosed longitudinally striated; the remainder of the head finely and densely punctured, more sparsely on the occiput. Prothorax transversely striated, broadly and very slightly emarginate anteriorly, the anterior margin slightly raised, strongly produced at the lateral angles. Mesothorax coarsely rugose, scutellum very coarsely punctured; median segment short, vertically truncate posteriorly, finely and densely punctured. Abdomen shining, densely and shallowly punctured; epipygium rugulose, very broadly rounded at the apex. The abdominal segments constricted near the base; beneath very finely and densely punctured at the base, coarsely and more sparsely at the apex, the first segment with a blunt tubercle in the middle. Black, the two apical segments bright ferruginous-red. Wings fuscous with brilliant purple-blue reflections, lighter at the apex. Length 17 mm.

Hab.—Queensland.

Type in Oxford University Museum, ex Coll. Saunders.

Very near *E. hæmorrhoidalis* Guér., but the prothorax is transversely striated, and the whole sculpture finer.

E. SIMILLIMUS Sm.

Rhagigaster simillimus Sm., Trans. Ent. Soc. Lond. (3) ii. 5, p. 390, 1865(♂).

Thynnus wolframii D.T., Cat. Hym. viii. 119(♂).

Probably only a local form of *E. hæmorrhoidalis*, from which it differs mainly by the red colour of the mesopleuræ, the lesser development of the frontal carinæ, and the presence of a fine median longitudinal carina on the epipygium.

♀. Unknown.

Hab.—N.W. Australia.

E. DIMIDIATUS Sm.

Rhagigaster dimidiatus Sm., Cat. Hym. vii. p. 62, n. 10, 1859(♂♀).

Thynnus ottenhallii D.T., Cat. Hym. viii. 112, 1897(♂♀).

♂. Clypeus coarsely longitudinally rugose. Front and vertex rugulose, an undulating transverse carina between the eyes, a wide V-shaped carina between the antennæ joining at the apex a short longitudinal carina which extends on to the basal portion of the clypeus. Prothorax transversely rugulose, the anterior margin raised and produced at the lateral angles. Mesothorax and scutellum coarsely rugose; median segment truncated posteriorly, finely rugulose at the base, finely punctured on the surface of the truncation. Epipygium rugulose at the base, longitudinally striated on the apical portion, truncate at the apex with a slight median emargination, the margin recurved.

♀. Third abdominal segment delicately transversely striated near the base. Pygidium vertically truncate posteriorly, the surface of the truncation longitudinally striated, the extreme apex smooth and narrowly rounded. Otherwise as in Smith's description.

Hab.—Sydney, N. S. W.

E. TESTACEIPES, n sp.

♂. Head punctured, very sparsely and finely on the occiput; a strong undulating transverse carina below the anterior ocellus, not quite reaching the eyes, a rounded carina between the

antennæ the ends reaching the transverse carina, the enclosed space longitudinally rugulose with a smooth line immediately below the transverse carina. Clypeus with two carinæ diverging from the base but not reaching the apex, the space between them elevated, narrow and rugulose, the sides of the clypeus punctured. Prothorax obscurely transversely rugulose. Mesothorax and scutellum coarsely and rather sparsely punctured. Median segment almost smooth, vertically truncate posteriorly, the posterior angles prominent. Abdominal segments slightly constricted at the base, sparsely punctured; the epipygium truncate at the apex, irregularly longitudinally striated. Hypopygium with the usual recurved aculeus armed with a strong blunt tooth on the upper surface. First abdominal segment beneath with a tubercle near the base. Black, the abdomen fusco-ferruginous, the legs testaceous-yellow, the coxæ black and the tarsi obscure fuscous. [Wings missing]. Length 19 mm.

Hab.—Australia.

Type in Oxford University Museum, ex Coll. Westwood.

E. INTEGER Fab.

Thynnus integer Fab., Syst. Ent. p.360, n.3, 1775(♂).

Rhagigaster integer Sm., Cat. Hym. B.M. vii. 60, 1859(♂).

Smith has published a good description of this insect. The type, which is as far as I know still unique, is in good condition in the Banksian Collection. Probably, like most of the Australian insects in that collection, it was taken at Cooktown, Q.

E. DECEPTOR Sm.

Thynnus deceptor Sm., Descr. n.sp. Hym. p.169, n.30, 1879(♂).

♂. The clypeus has a prominent A-shaped carina, the front is produced over the base of the antennæ, and there is a short transverse carina below the anterior ocellus. The median segment is vertically truncate posteriorly, and the abdomen is finely and densely punctured. Epipygium strongly longitudinally striated, broadly truncate at the apex with a very slight median

emargination. The aculeus is sharply recurved, but does not project much beyond the epipygium.

There is a colour variety in the British Museum in which the abdomen is dark fuscous.

The female placed with this species in the British Museum Collection probably does not belong to it.

Hab.— N.W. Australia.

Most nearly allied to *E. integer* Fab.

E. MORIO Westw.

Rhagigaster morio Westw., Arc. Ent. ii. 2, p.105, n.4, 1844(♂); Sauss., Reise d. Nov.Zool. ii. 1, p.114, n.6, t.4, f.67, 1867(♂); Sauss., Stett. Ent. Zeit. xxx. p.58, n.8, 1869(♀).

Thynnus serrripes Sm., Cat. Hym. B. M. vii. p.44, n.125, 1859(♀).

Saussure's descriptions are good. He expresses some doubt as to the correctness of the pairing, which has been now settled by more than one collector.

Hab.—Sydney, N. S.W.

My dissections of the female show the maxillary palpi six-jointed as in Westwood's plate showing *E. bicolor*.

E. BARNARDI, n sp.

♂. Mandibles slender, almost falcate, the tooth on the inner margin hardly at all developed. Clypeus with a short longitudinal carina from the base, which branches in front enclosing a triangular space which is shining, and sparsely punctured, the punctures large and confluent. The sides of the clypeus covered with long white pubescence. A v-shaped carina between the antennæ and a transverse frontal carina, which does not reach the eyes. Front finely rugulose, occiput punctured. Labrum exposed. Prothorax rugulose, the lateral angles less prominent than in the other species of the genus; mesothorax and scutellum coarsely punctured. Median segment finely punctured, vertically truncate posteriorly, the surface of the truncation delicately reticulated. Abdomen densely punctured, the two apical segments most coarsely, segments 2-6 constricted near the base. No

tubercle beneath the first segment. Epipygium broadly truncate at the apex, punctured, with delicate, short, longitudinal striæ near the apex. The aculeus of the hypopygium does not extend much beyond the epipygium. Black, with greyish-white pubescence. Apical half of the mandibles and the legs piceous. Length 11 mm.

Hab.—Duaringa, Q.

The head and prothorax of a female pinned with this resemble those parts in other species of the genus.

Genus *AELURUS* Klug.

Aelurus Klug, Physik. Abh. Akad. Wiss. Berlin, 1840, p. 42, 1842 (nec *Aelurus* Sm.).

♂. Antennæ long and slender; head more or less narrowed behind the eyes; mandibles bidentate; labium short, labial palpi four-jointed, the first joint much the longest; maxilla small, galea subtruncate at the apex and not divided; maxillary palpi six-jointed, the apical joints filiform, very long and slender, the three basal joints short and stouter, the first extremely short. Labrum transverse, short. The division of the first cubital cell is marked by a scar only, and the third cubital cell is not much narrowed along the radial nervure.

♀. Head nearly rectangular; antennæ thick; mandibles large, not bidentate; abdomen cylindrical. Tarsal ungues simple. Ashmead gives the maxillary palpi as four-jointed.

I have not been able to dissect a female, nor does Klug give any details as to the mouth-parts. The two Australian species which I assign to this genus correspond well with the male of *Ael. clypeatus*, figured by Klug, in mouth-parts and neuration, and are very different from the Australian species assigned to *Aelurus* by Westwood and Smith (*Tachynomyia*). I have separated the genus *Lepteirone* from *Aelurus* on account of the narrowing of the third cubital cell along the radial nervure. But *Ael. nasutus* Klug, is the type of the genus, not *Ael. clypeatus*; and the neuration may possibly differ.

Type *Ael. nasutus* Klug (Brazil).

Key to the species of Aelurus.

♂♂. A. Scutellum broadly rounded at the apex.

a. Black, legs and antennæ ferruginous.

Ael. grandiceps, n.sp.

B. Scutellum subtriangular.

b. Legs and four basal abdominal segments bright rufo-testaceous.

Ael. ruficrus, n.sp.

AEL. GRANDICEPS, n.sp.

♂. Clypeus with a carina from the base almost reaching the apex, smooth at the apex, finely rugulose on the sides. Head very large, produced behind the eyes, shallowly but strongly punctured; a V-shaped carina between the antennæ. Prothorax very sparsely and shallowly punctured, the anterior margin raised. Mesothorax sparsely punctured on the disc, densely and finely on the sides. Scutellum rounded posteriorly. Median segment short, reticulate, almost smooth at the base, obliquely truncate. A short sulca from the base of the first abdominal segment, and a minute tubercle at the base beneath; a transverse impressed line near the base of segments 2-5. Epipygium truncate at the apex, hypopygium rounded and ciliated. Abdomen shining, shallowly and sparsely punctured. Black, with a little fulvous pubescence; mandibles, except the apex, antennæ and legs, fulvous. Wings fulvo-hyaline, nervures fulvous. Length 15 mm.

♀. Head rectangular, the posterior angles slightly rounded, much longer than broad, strongly punctured, the punctures large and elongate; front produced into a very small blunt tubercle on each side at the base of the antenna. Clypeus with a median carina. Thorax and median segment with deep, elongate punctures, often confluent. Prothorax subquadrate, slightly narrowed anteriorly; median segment longer than the prothorax, very little broadened posteriorly, obliquely truncate. Abdomen cylindrical, punctured, the punctures shallower than those on the thorax, but more elongate and confluent. Pygidium simple, rounded at the apex. Castaneous-brown, the abdomen darker. Length 10 mm.

Hab.— Sydney, N. S. W.

AEL. RUFICRUS, n.sp.

♂. Clypeus with a very short carina at the base, branching broadly and shortly; the apical portion smooth and shining, not much produced at the apex, the apical margin slightly emarginate at the sides before the angles, which are produced into short, blunt spines. Head densely punctured, with an interantennal carina, rounded at the apex; slightly narrowed behind the eyes. Prothorax depressed, the anterior margin raised, very closely and minutely punctured. Mesothorax and scutellum punctured, the scutellum rather long, narrowly truncate at the apex. Median segment delicately reticulate, almost smooth at the base, rounded. Abdomen elongate, subcylindrical, shining, with shallow, scattered punctures; segments 2-5 with a transverse line near the base. Epipygium strongly punctured, smooth at the apex and subtruncate. Hypopygium rounded and ciliated. Black; with fulvous pubescence on the sides of the head and median segment; the mandibles, the apical portion of the clypeus, the legs, the tegulae, and the four basal segments of the abdomen bright rufotestaceous. Wings pale flavo-hyaline, nervures black, testaceous at the base. Length 15-17 mm.

Hab.—Kenthurst, N.S.W. Type in Coll. Froggatt.

Subgenus LEPTAIRONE, n.subgen.

♂. Differs from *Aelurus* in the neuration, the third cubital cell being much narrowed along the radial nervure. The clypeus has either a carina from the base ending in a tubercle before the apex, or an elevated triangular area from the base, suddenly ceasing before the apex, leaving the apex depressed below the basal portion.

The female resembles that of *Eirone* and *Aelurus* in form, but I have been unable to dissect specimens.

The insects are slenderer than in *Eirone* (♂), in this point resembling the typical S. American *Aeluri*.

Type *L. rufopictus* Sm.

This group occurs also in S. America, *Thynnus nigrofasciatus* Sm., belonging to it.

I do not regard the group as sufficiently distinct to merit full generic rank.

Key to the Species of Lepteirone.

- ♂ ♂. i. Head large, produced behind the eyes, not appreciably narrowed posteriorly.
- A. Abdomen light ferruginous. An interrupted yellow line on the vertex.
- a. Black, clypeus and anterior margin of the prothorax yellow. *L. arenaria*, n.sp.
- ii. Head not produced behind the eyes, more or less narrowed posteriorly.
- A. Abdomen light ferruginous.
- a. Prothorax yellow.
- a². A spot on the mesothorax and the scutellum yellow. *L. rufopicta* Sm
- b². Mesothorax and scutellum black entirely. *L. caroli*, n.sp.
- b. Margins of the prothorax yellow.
- a². An interrupted line on the vertex and the postscutellum yellow. *L. subacta*, n.sp.
- c. Anterior margin of the prothorax only yellow. *L. ichneumoniformis* Sm.
- B. Abdomen with the basal segments ferruginous.
- a. Three basal abdominal segments ferruginous. *L. comes*, n.sp.
- b. Four basal segments ferruginous, except the base of the first. *L. pseudosedula*, n.sp.
- C. Abdomen black.
- a. Legs and antennæ ferruginous. *L. fallax* Sm.
- b. Basal half of flagellum of antennæ, femora and tibiæ ferruginous. *L. cubitalis*, n.sp.
- c. Wholly black.
- a². Slender, finely and rather sparsely punctured. *L. opaca*, n.sp.
- b². More robust, more closely and strongly punctured. *L. tristis* Sm.
- ♀ ♀. A. Head nearly square.
- a. Median segment considerably broadened from the base.
- a². Without a depression near the posterior angle of the prothorax. *L. ichneumoniformis* Sm.
- b². With a slight depression on each side near the angles of the prothorax. *L. cubitalis*, n.sp.
- b. Median segment very slightly broadened from the base. *L. fallax* Sm.
- B. Head much longer than broad.
- a. Median segment with a delicate median carina. *L. subacta*, n.sp.

L. RUFOPICTA Sm.

Thynnus rufopictus Sm., Descr. n.Sp. Hym. p.159, n.3, 1879(♂).

The basal portion of the clypeus is raised and narrowly triangular, the apical portion is abruptly depressed and transversely truncate at the apex. The head is produced behind the eyes, strongly rounded at the posterior angles, broader than the prothorax. Head and thorax very finely and closely punctured, median segment and abdomen almost smooth, the abdomen elongate fusiform. The scutellum is broadly rounded at the apex. The epipygium is elongate, punctured, narrowly truncate at the apex, the hypopygium narrow and ciliated at the apex.

♀. Unknown.

Hab.—Adelaide, S.A.; Melbourne.

A variety of this species in Coll. Froggatt has the median segment black instead of ferruginous, and is a rather more robust insect, the thorax being broader.

L. PSEUDOSSEDULA, n.sp.

♂. Clypeus slightly produced, depressed at the extreme apex; head very closely and finely punctured, not much narrowed to the posterior margin, about as wide as the prothorax. Thorax finely and closely punctured, the anterior margin of the pronotum slightly raised. Scutellum narrowly truncate at the apex, median segment very delicately reticulate. Abdomen elongate fusiform, almost smooth; the two apical segments delicately punctured and pubescent, the apical margins of segments 1-4 slightly depressed, and a faint, depressed, transverse line near the base of segments 2-5. Black; the anterior margin of the clypeus, the inner margin of the eyes, an obscure mark on each side of the vertex, the legs, except the coxæ and the base of the trochanters, the apical half of the first and the whole of the second, third and fourth abdominal segments ferruginous; the mandibles, the anterior margin of the pronotum and a broad band on the posterior margin, and the tegulæ, yellow. Wings hyaline, iridescent; nervures testaceous-brown. Length 10 mm.

Hab.—Adelaide, S.A.

Type in B.M., ex Coll. Smith.

L. ICHNEUMONIFORMIS Sm.

Thynnus (Agriomya) ichneumoniformis Sm., Cat. Hym. B.M. vii. p.39, n.102, 1859(♂).

♂. Clypeus pubescent; a carina from the base to the centre, where it is slightly prominent, overlapping a smooth, oblique, triangular truncation which extends to the apex. Head finely punctured, narrowed behind the eyes. Prothorax shining, very faintly punctured, the anterior margin raised; mesothorax and scutellum finely punctured, the scutellum large and broadly rounded at the apex. Median segment delicately reticulate, smooth at the base, with a short longitudinal sulca from the base. Abdomen slender fusiform, with very shallow scattered punctures; the epipygium strongly punctured, with sparse fulvous pubescence. Black; the abdomen, except the base of the first segment, and the legs, except the coxæ and trochanters, light ferruginous; the mandibles, two small spots between the antennæ, a narrowly interrupted line on the anterior margin of the prothorax, and a short line before the tegulæ, yellowish-white; the mandibles at the apex ferruginous. Wings hyaline, slightly iridescent, nervures fuscous, tegulæ testaceous. Length 9 mm.

♀. Head rectangular, a little longer than broad, smooth and shining, with a delicate, median, frontal sulca. Thorax and median segment sparsely punctured, the median segment elongate, longer than the prothorax, broadened from the base, and obliquely truncate at the apex. Abdomen subcylindrical, shining, with large, elongate punctures; the epipygium with a broad, median longitudinal carina, narrowly rounded at the apex; the first segment beneath with a minute tubercle at the base. Ferruginous-brown, the abdominal segments stained with black on the sides. Length 5 mm.

Hab.—Berwick, Melbourne, Vic.

The type appears to be lost, and my identification may possibly be mistaken.

L. CAROLI, n.sp.

♂. Clypeus with a short carina from the base, which ends about the centre in a subtubercular prominence, overlapping a

broad triangular truncation extending to the apex. Head very finely and densely punctured, a short, median frontal sulca between the antennæ, separating two small tubercles. Prothorax shining, with very minute, shallow punctures, the anterior margin slightly raised. Mesothorax and scutellum densely and finely punctured, the scutellum subtriangular, rounded at the apex. Median segment very finely reticulate, with a short, median, longitudinal sulca from the base. Abdomen elongate fusiform, very faintly punctured, shining; epipygium strongly punctured, with thin fulvous pubescence on the sides. Hypopygium rounded and ciliated at the apex. Black; the antennæ, legs, except the coxæ, and abdomen, light ferruginous; the mandibles, the triangular truncation of the clypeus and the anterior margin at the sides of the clypeus, the prothorax, except a black spot in the middle and the tegulæ, yellow. Wings hyaline, iridescent, nervures fuscous. Length 10 mm.

Hab.—Victoria (French).

L. ARENARIA, n.sp.

♂. Head large, produced behind the eyes, the sides nearly parallel; shining, rather closely and shallowly punctured; two rather prominent tubercles between the antennæ. The clypeus with a small elevated triangular area on the basal portion, depressed on the apical portion, subtruncate at the apex and produced into minute spines at the apical angles. Prothorax almost smooth with minute shallow punctures. Mesothorax and scutellum shining, rather sparsely punctured, scutellum broadly rounded at the apex. Median segment nearly smooth at the base, very finely transversely rugulose at the apex. Abdomen shining, with a few scattered punctures; epipygium punctured, elongate, with a very fine median carina at the apex, and with sparse fulvous pubescence. Black; the abdomen, except the extreme base, and legs, except the coxæ and trochanters, ferruginous. A fuscous mark on the fifth abdominal segment. The anterior margins of the clypeus and face uniting with a central mark on the clypeus extending nearly to the base, the two

tubercles between the antennæ, a broadly interrupted line on the vertex, a narrowly interrupted line on the anterior of the prothorax and a narrow line in front of the tegulæ, yellow. The wings hyaline, tegulæ and nervures at the base dark testaceous, the nervures at the apex black. Length 11 mm.

♀. Unknown.

Hab.—Victoria (French).

L. SUBACTA, n sp.

♂. Head not much narrowed behind the eyes nor produced; closely and finely punctured, with two slightly prominent tubercles between the antennæ. The clypeus is depressed along the apical margin, with a slight tubercle on each side before the apex. Prothorax almost smooth, the anterior margin considerably raised; mesothorax and scutellum closely and finely punctured, the scutellum subtruncate at the apex. Median segment very finely reticulate, with a very small, transverse, shining mark at the base, rounded at the apex. Abdomen shining, with a few scattered punctures. Epipygium with a broad median carina, not elongate, narrowly rounded at the apex, thinly clothed with long fulvous hairs. Black; the legs, except the coxæ and trochanters, the abdomen, except the extreme base, and a spot at the apex of the scutellum, ferruginous; the margin of the face and clypeus, a triangular spot on the clypeus, the tubercles between the antennæ, an interrupted line on the vertex, the anterior margin of the prothorax narrowly and the posterior margin broadly, almost uniting with the anterior marginal line in the middle, and the postscutellum, yellow. Wings hyaline, nervures dark fuscous. Length 9 mm.

♀. Head rectangular, nearly twice as long as broad, shining, sparsely punctured, with a slight median frontal sulca. Thorax sparsely punctured; prothorax shorter than the median segment, narrowed and rounded anteriorly. Median segment elongate, the sides almost parallel. Abdomen cylindrical, finely punctured; a median longitudinal depression on the apical portion of segments

2-4. Epipygium with a median carina. Castaneous-brown. Length 5 mm.

Hab.—Adelaide (Fortnum). Types in Oxford University Museum.

L. COMES, n.sp.

♂. Very slender. Clypeus with a raised triangular elevation from the base to near the apex, where it is broadest, suddenly depressed at the apex. Head densely and finely punctured, narrowed posteriorly. Prothorax shining, almost smooth; mesothorax delicately punctured, scutellum rather long, narrowly rounded at the apex. Median segment delicately reticulate, with a deep longitudinal sulca from the base reaching about half-way to the apex. Abdomen with a few shallow punctures, the apical segment more coarsely punctured, with thin fulvous pubescence. Black; the mandibles yellow, ferruginous at the apex; the antennæ, legs, except the coxæ and trochanters, the two basal abdominal segments and the third at the base, dark ferruginous the two apical joints of the antennæ fuscous. A very narrow interrupted white line on the anterior margin of the prothorax. Wings hyaline, iridescent, nervures fuscous. Length 7 mm.

Hab.—Victoria (French).

L. OPACA, n.sp.

♂. Slender. Clypeus with a basal carina produced into a prominent tubercle in the centre of the clypeus; head finely punctured, with a short white pubescence and a very fine median frontal sulca; narrowed behind the eyes. Prothorax rather depressed, narrowed anteriorly, very finely and shallowly punctured; mesothorax more strongly punctured; scutellum subtriangular, narrowly rounded at the apex; median segment reticulate, almost smooth at the base, with white pubescence on the sides. Abdomen slender, shining, with very minute, shallow punctures, a slightly raised mark on each side of segments 2-5 near the apical margin. Epipygium strongly punctured, broadly rounded at the apex. Entirely black, the head opaque, thorax and

abdomen shining. Wings hyaline, iridescent, nervures black. Length 10 mm.

The third cubital cell subtriangular, being very short along the radial nervure.

Hab.—Victoria (French).

L. TRISTIS Sm.

Thynnus (Agriomyia) tristis Sm., Cat. Hym. B.M. vii. p.34, n.88.

♂. Head densely punctured; the clypeus with a longitudinal carina from the base to the centre, where it is produced into a tubercle. The anterior margin of the prothorax raised, the scutellum transversely truncate at the apex; the whole thorax closely punctured, most finely on the prothorax. Median segment finely reticulate, almost smooth at the base. Abdomen finely and closely punctured, the epipygium rugulose. Entirely black. Wings hyaline, iridescent, nervures dark fuscous. Length 12 mm.

The antennæ are shorter and stouter than in most species of the genus.

Hab.—Australia.

L. FALLAX Sm.

Thynnus fallax Sm., Cat. Hym. B.M. vii. p.35, n.91, 1859(♂).

A pair from Adelaide in the Hope Collection at Oxford.

The male differs from the type in having the space at the base of the median segment punctured instead of smooth and shining. The scutellum is rather narrowly truncate at the apex.

♀. Head rectangular, rather longer than broad, very sparsely and finely punctured, shining. Thorax and median segment shining, sparsely and finely punctured; the prothorax almost square; the median segment longer than the prothorax, the sides almost parallel, obliquely truncate posteriorly. Abdomen shining, more densely punctured than the thorax, the first segment vertically truncate anteriorly, and with a small acute tubercle at the base beneath. Epipygium narrowly rounded at the apex, with a slightly raised, broad median carina. The abdomen is

subcylindrical. Ferruginous-brown; the abdomen fuscous, except the apical segment. Length 9 mm.

Hab.—Adelaide.

The male closely resembles *Eirone ruficornis* Sm., in general appearance.

L. CUBITALIS, n.sp.

♂. Clypeus slightly advanced, truncate at the apex, a median carina from the base ending in a minute tubercle a little before the apex, very finely punctured. Head densely punctured, narrowed behind the eyes, with two small tubercles between the antennæ. Prothorax shining, very finely punctured, the anterior margin raised, with a faint, depressed, shining line behind the margin. Mesothorax punctured, the scutellum subtriangular, narrowly rounded at the apex. Median segment delicately reticulate, slender. Abdomen subpetiolate fusiform, shining, with minute shallow punctures and long cinereous pubescence on the sides of the apical segments. Black; the antennæ from the third to the eighth joints, the mandibles at the apex, the tibiæ, tarsi, and posterior femora ferruginous; the mandibles at the base, a narrow line on the anterior margin of the clypeus, a narrow, interrupted line on the anterior margin of the prothorax and a narrow transverse line on the postscutellum, creamy-white. Wings hyaline, slightly iridescent, nervures dark fuscous. Length 7 mm.

♀. Head rectangular, longer than wide, slightly rounded at the posterior angles, shining, with a few minute punctures, a very short median frontal sulca, front between the antennæ deeply emarginate. Thorax and median segment with sparse, large, elongate punctures, prothorax rectangular, longer than broad, rather narrower than the head; median segment longer than the prothorax, moderately broadened to the apex. Abdomen cylindrical, more closely punctured than the thorax, the apical portion of the epipygium smooth with a longitudinal median carina. First abdominal segment beneath with a minute tubercle at the

base. Chestnut-brown, stained with black on the median segment and on the abdominal segments above. Length 4 mm.

Hab.—Victoria (French). Types in Coll. Froggatt.

Subgenus *EIRONE* Westw.

Eirone Westw., Arc. Ent. ii. 2, 144, 1844.

♂. Very near *Aelurus* Klug, from which it differs in the joints of the maxillary palpi, the three apical joints in *Eirone* being only a little more than half as long again as the three basal joints.

♀. Head rectangular; maxillæ small, with four-jointed maxillary palpi; labial palpi four-jointed. Abdomen cylindrical or sub-cylindrical. Tarsal ungues simple.

In *E. dispar*, the typical species, the mandibles of the female are bidentate, but this is not usually the case.

The differences between this and *Aelurus* are, in my opinion, too slight to merit full generic rank. Ashmead (Canad. Ent. xxxv.) mentions *Eirone* among genera of which the female only is known, and suggests that *Lophocheilus* Guér., may be the male. He cannot have looked at Westwood's description and figures, which are very good and clear; but has probably been misled by an error of Saussure's.

Type *E. dispar* Westw.

Key to the Species of Eirone.

♂♂. i. Clypeus with a triangular truncation at the apex.

A. Head very large, produced behind the eyes.

a. Median segment short, truncate.

a². Anterior margin of prothorax yellow, legs testaceous.

Length 6-8 mm.

E. crassiceps, n.sp.

B. Head not so large.

a². Antennæ and legs yellow. Length 10 mm.

E. lucidula, n.sp.

b². Legs only yellow. Length 10 mm.

E. lucida Sm.

c². Antennæ, legs, prothorax and scutellum yellow. Length

5-7 mm.

E. scutellata, n.sp.

b. Median segment rounded.

a². Legs and antennæ ferruginous. Length 11 mm.

E. ruficornis Sm.

b². Antennæ only ferruginous. Length 7 mm.

E. fulvicostalis, n.sp.

- c². The triangular truncation of the clypeus white.
- α³. A white line on the anterior margin of the prothorax.
- α⁴. Clypeus without a median carina; with a minute tubercle on each side. *E. tuberculata* Sm.
- b⁴. Clypeus with a median carina. *E. vitripennis* Sm.
- b³. Prothorax wholly black. Length 8 mm. *E. osculans*, n.sp.
- ii. Clypeus without a triangular truncation at the apex.
- A. Abdominal segments slightly constricted near the base.
- a. Wholly black.
- α². Thorax strongly punctured.
- α³. Median segment with a broad low median carina at the base. *E. tenuipalpa*, n.sp.
- b³. Median segment without a carina. Length 11 mm. *E. dispar* Westw.
- b². Thorax finely punctured. Length 6 mm. *E. tenebrosa*, n.sp.
- b. Postscutellum white.
- α². Clypeus white, antennæ black. Length 5 mm. *E. parca*, n.sp.
- b². Clypeus black, antennæ fuscous. *E. inconspicua*, n.sp.
- B. Abdominal segments not constricted.
- a. Clypeus with a median carina from base to apex.
- α². Head and five basal segments of abdomen ferruginous. Length 13 mm. *E. ferrugineiceps*, n.sp.
- b². Light castaneous, two apical segments of abdomen black. Length 12 mm. *E. castaneiceps*, n.sp.
- ♀ ♀. i. Abdomen subcylindrical.
- a. Black, prothorax and two basal segments of the abdomen ferruginous. *E. lucidula*, n.sp.
- b. Wholly castaneous.
- α². First abdominal segment truncate, with a minute spine at each angle. *E. scutellata*, n.sp.
- b². Pygidium with minute lateral spines and a tuft of hair at the apex. *E. fulvicostalis*, n.sp.
- ii. Abdomen cylindrical.
- A. Median segment longer than the prothorax.
- a. With an impressed median longitudinal mark on the apical half of abdominal segments 2-4.
- α². First abdominal segment short, much broadened from the base. *E. tuberculata* Sm.
- b². First abdominal segment not short, not much broadened from the base. *E. tenebrosa*, n.sp.
- b. Without an impressed longitudinal mark on segments 2-4.
- α². Delicately punctured, mandibles bidentate. *E. dispar* Westw.

*b*². Strongly punctured, mandibles simple. *E. tenuipalpa*, n.sp.

B. Median segment about the same length as the prothorax.

a. Front between the antennæ deeply emarginate. *E. parca*, n.sp.

E. DISPAR Westw.

Eirone dispar Westw., Arc. Ent. ii. 2, p. 144, t. 82, f. 5-6, 1844 (♂♀).

? *Thynnus (Agriomyia) brevicornis* Sm., Cat. Hym. B. M. vii. p. 39, n. 103, 1859 (♂).

The female of this species has the mandibles bidentate. In other nearly related species the mandibles are simple. Westwood gives full details as to the mouth-parts in his plates and in his generic description. *Thynnus brevicornis* Sm., is almost certainly a synonym, but the type seems to be lost and the description is not sufficiently full for absolute certainty.

Hab.—Adelaide, S. A.

E. TENUIPALPA, n.sp.

♂. Head transverse, slightly narrowed posteriorly; clypeus densely and finely punctured, smooth on the apical margin, not much advanced. Head and thorax strongly punctured; prothorax very long, the anterior margin slightly elevated at the sides, slightly emarginate in the middle. Median segment with a fine median carina from the base to the centre, a smooth area at the base, the remainder finely transversely rugulose, smooth at the extreme apex. Abdomen fusiform, the first segment with a median longitudinal sulca not reaching the apex, subtuberculate beneath at the base. Segments 2-4 with an impressed transverse line near the base, and slight lateral elevations near the apical margin. All the segments densely punctured, almost smooth at the base. Hypopygium rounded, ciliated at the apex. Black, the abdomen shining, mandibles fusco-ferruginous. Wings hyaline, faintly iridescent, a fuscous cloud in the radial and second cubital cells, nervures black. Length 12 mm.

♀. Head rectangular, slightly rounded at the posterior angles, longer than broad, with a faint median frontal sulca. Head, thorax and median segment punctured, the punctures large and

elongate. Prothorax slightly narrowed anteriorly; median segment longer than the prothorax, moderately broadened to the apex, where it is obliquely depressed. First abdominal segment narrowly truncate anteriorly; the surface of the truncation concave, with a median sulca. The four basal segments with elongate punctures, shallow on the fourth segment. Apical segments very finely punctured, the punctures not elongate. Pygidium with a delicate, longitudinal median carina. A minute tubercle at the base of the first segment beneath. Abdomen cylindrical. The mandibles are not bidentate. Entirely castaneous-brown. Length 7 mm.

Hab.—Mackay, Q.

Near *E. dispar* Westw., from which it differs in the sculpture of the median segment in the male, and the simple mandibles of the female.

E. TENEBROSA, n.sp.

♂. Clypeus and head delicately and closely punctured; clypeus without a carina. Prothorax shining, with very fine, almost microscopic, punctures, the anterior margin raised. Mesothorax and scutellum more strongly punctured, the scutellum narrowly rounded at the apex; median segment rather short, delicately reticulate, with a smooth mark at the base. Abdominal segments finely punctured, smooth at the extreme apex; a raised mark close to the apical margin and strongly emarginate posteriorly in the middle on segments 2-4. Entirely black, the mandibles fuscous. Wings hyaline, strongly iridescent, nervures fuscous. Length 6 mm.

♀. Head rectangular, longer than broad, shining, with a few minute shallow punctures; a very fine sulca between the antennæ. Thorax and median segment shining, with scattered punctures, the prothorax narrower than the head; the median segment longer than the prothorax, very slightly widened to the apex. Abdomen cylindrical, rather sparsely punctured, the punctures large and elongate, a depressed, median, longitudinal line on the apical half of segments 2-4. Epipygium with a delicate median

carina, not reaching the apex, which is pointed. Shining castaneous-brown, abdominal segments 2-5 stained with black. Length 6 mm.

Hab.—Melbourne (Bakewell).

Types in Oxford University Museum.

E. INCONSPICUA, n.sp.

♂. Clypeus short, without a triangular truncation at the apex; head delicately punctured, with a short, faint sulca between the antennæ. Anterior margin of the prothorax moderately raised; the whole thorax punctured. The median segment finely reticulate. Abdomen finely punctured, the median sulca on the first segment extending from the base more than half-way to the apex, segments 2-4 with an impressed transverse line near the base, and with a raised mark on each side near the apical margin, the marks indistinctly connected and widely emarginate in the centre. Shining black, with white pubescence; the postscutellum white; the mandibles, antennæ and the tarsi of the anterior legs fusco-ferruginous. Wings hyaline, iridescent, nervures black. Length 6 mm.

♀. Unknown.

Hab.—Cairns, Q.

Allied to *E. parca*.

E. PARCA, n.sp.

♂. Clypeus hardly at all advanced, without a basal carina or oblique truncation, transversely truncate at the apex, very delicately punctured, pubescent at the sides. Head finely punctured, with a very delicate longitudinal carina from the vertex to the anterior ocellus. Prothorax long, the anterior margin raised, except in the middle, very finely and closely punctured, as is also the mesothorax, which is very short. Scutellum subtriangular, narrowly truncate at the apex, rather more sparsely punctured. Median segment finely reticulate, almost smooth at the base. Abdomen fusiform, very delicately and closely punctured, the first segment with a short sulca from the base; segments 2-4 with a raised mark on each side near the apical margin, and with the

apical margin widely emarginate. Hypopygium rounded and ciliated at the apex. Black; the clypeus, postscutellum and an interrupted line on the anterior margin of the prothorax white; mandibles and anterior tibiae and tarsi fuscous. Wings hyaline, iridescent, with a fuscous cloud in the radial cell, nervures fusco-testaceous. Length 7-8 mm.

♀. Head rectangular, rather longer than broad, the front between the antennae deeply and narrowly emarginate; the mandibles acute at the apex, not bidentate. The whole insect punctured, the punctures large and elongate. The prothorax longer than broad, slightly narrowed anteriorly; the median segment about the same length as the prothorax, slightly narrowed anteriorly; the median segment about the same length as the prothorax, slightly broadened to the apex, obliquely depressed posteriorly. Abdomen cylindrical, the first segment vertically truncate at the base. Entirely castaneous. Length 5 mm.

Hab.—Mackay, Q. (♂♀ in cop.).

E. FULVICOSTALIS, n.sp.

♂. Clypeus slightly advanced, punctured, with a small, sub-triangular truncation at the apex, the apical margin transversely truncate. Head and thorax densely and finely punctured, the prothorax not very long, with the anterior margin raised and the sides nearly parallel; the scutellum rounded at the apex, the median segment reticulate, closely punctured at the base, short and depressed. Abdomen short, fusiform, finely punctured; the first segment with a short median sulca from the base; segments 2-4 with a raised mark on each side near the apical margin. The hypopygium rounded and ciliated at the apex. Black; the mandibles and antennae, except the scape, fulvous; the tibiae and tarsi of the anterior legs fuscous. Wings hyaline, faintly flavo-hyaline at the base, splendidly iridescent, nervures fulvous. Length 7 mm.

♀. The whole insect punctured, the punctures large and more or less elongate. Head rectangular, longer than wide, with a strong median frontal sulca; wider than the thorax. Prothorax

slightly narrowed anteriorly, broader than long; median segment much broadened at the apex, where it is obliquely truncate. Abdomen subcylindrical, first segment vertically truncate anteriorly, the two apical segments narrowed, the pygidium pointed, with a small tuft of pubescence at the apex. Chestnut-brown, abdominal segments suffused with fuscous. Length 3-4 mm.

Hab.—Mackay, Q (♂♀ in cop.).

E. OSCULANS, n.sp.

♂. Clypeus very slightly advanced, with a very short carina from the base joining a narrow, oblique, triangular truncation which extends to the apex. Head densely punctured, narrowed behind the eyes. Prothorax long, the anterior margin straight and raised, the raised collar narrowly interrupted in the middle. Mesothorax and prothorax very delicately punctured, the prothorax most sparsely; scutellum sparsely punctured, rounded at the apex. Median segment finely reticulated, smooth at the base. Abdomen very delicately and closely punctured, shining, elongate fusiform, the first segment with a short median basal sulca, segments 2-4 with slightly raised marks on each side near the apical margin. Hypopygium rounded, ciliated. Black; a white line on the anterior margin of the clypeus, the triangular truncation of the clypeus white; tibiæ and tarsi of the anterior legs fuscous. Wings hyaline, with a faint fuscous cloud in the radial cell, nervures fuscous. Length 8 mm.

Hab.—Mackay, Q.

Nearest to *E. vitripennis* Sm.

E. VITRIPENNIS Sm.

Thynnus (Eirone) vitripennis Sm., Cat. Hym. B. M. vii. p.41, n.113, 1859(♂♀).

♂. The scutellum is rounded at the apex; the median segment is rounded, depressed at the apex, delicately reticulate, most finely at the base. The abdomen is finely and very-shallowly punctured. The third cubital cell is considerably narrowed along the radial nervure.

Hab.—Victoria (Lower Plenty).

The female under this name in the British Museum does not correspond with Smith's description.

The type appears to be lost.

E. TUBERCULATA Sm.

Thynnus (*Eirone*) *tuberculatus* Sm., Cat. Hym. B. M. vii. p.41, n.112, 1859(♂♀).

♂. The scutellum is rather broadly subtruncate at the apex; the median segment rather long and narrow at the apex, finely reticulate, with a short median sulca from the base. The abdomen is subpunctate, segments 2-4 with a curved raised mark near the apical margin on each side.

♀. An impressed median longitudinal line on the apical portions of abdominal segments 2-4, and a curved raised mark on each side near the apical margin. The pygidium at the apex is acute, with a faint median carina and the lateral margins slightly raised.

Hab.—Victoria (Lower Plenty).

E. RUFICORNIS Sm.

Thynnus (*Agrionymia*) *ruficornis* Sm., Cat. Hym. B.M. vii. p.34, n.89, 1859(♂).

Thynnus haerdtii D.T., Cat. Hym. viii. 108(♂).

The clypeus has a short carina from the base, joining a smooth, oblique, triangular truncation which extends to the apex. Hypopygium rounded and ciliated at the apex.

Hab.—Swan River, W.A.

E. SCUTELLATA, n.sp.

♂. Clypeus with a very short delicate carina from the base, a short and wide triangular truncation at the apex. Head and thorax densely punctured; head narrowed behind the eyes; the anterior margin of the prothorax very slightly raised; the scutellum rather broadly truncate at the apex. Median segment short, depressed and subtruncate posteriorly, delicately reticulate. Abdominal segments shining, with very fine punctures at the

base, smooth at the apex. Pygidium smooth and rounded. Abdomen fusiform, short. Black; antennæ fuscous, the scape ferruginous; mandibles, the anterior portion of the clypeus, a narrowly interrupted line on the anterior margin of the prothorax, a curved line before the tegulæ, the tegulæ, a large spot on the scutellum, a transverse line on the postscutellum and the legs yellow. Wings hyaline, iridescent, nervures testaceous. Length 5-7 mm.

♀. Head much longer than wide, slightly narrowed to the posterior margin, shining, very finely and sparsely punctured, with a very delicate median frontal sulca. Prothorax narrowed and rounded anteriorly, about the same length as the median segment, which is moderately broadened to the apex where it is obliquely truncate. Thorax, median segment and abdomen shining, with large, elongate, shallow punctures. Abdomen sub-cylindrical, the first segment truncate at the base, the lateral angles of the truncation produced into short spines, a minute tubercle beneath near the base. Epipygium pointed. Entirely castaneous. Length 3 mm.

Hab.—Mackay, Q. (♂♀ in cop.), Cape York, Q.

Cape York specimens have the whole pronotum yellow, and the sculpture on the median segment is coarser.

E. LUCIDA Sm.

Thynnus (Agridomyia) lucidus Sm., Cat. Hym. B.M. vii. p.36, n.95, 1853(♂).

The antennæ are black, not yellow as in the following species; it is also much less strongly punctured, especially on the abdomen. The type is in the Oxford University Museum.

♀. Unknown.

Hab.—Tasmania.

E. LUCIDULA, n.sp.

♂. Clypeus almost smooth, a very faint median carina from the base to the centre, whence the clypeus is broadly triangularly truncate to the apex. Head punctured, least strongly on the occiput. Prothorax of moderate length, the anterior margin

raised. The whole thorax punctured, the scutellum rounded at the apex. Median segment smooth at the extreme base, with a slight median depression, the remainder of the segment rugulose, most finely near the apex; the segment is obliquely depressed to the apex. Abdomen short, fusiform, delicately punctured; the first segment with a short median sulca from the base. Hypopygium broadly rounded, ciliated. Black; antennæ, mandibles, clypeus on the apical half, tegulæ and legs yellow. Wings hyaline, slightly iridescent, nervures fuscous, testaceous at the base. Length 10-11 mm.

♀. Head rectangular, rather longer than broad, with fine scattered punctures, the front more closely punctured, with a short median frontal sulca. Thorax and median segment sparsely and finely punctured; the prothorax narrowed and rounded anteriorly, as broad on the posterior margin as long; the median segment as long as the prothorax, obliquely truncate at the apex, where it is nearly twice as broad as at the base. Abdomen broader than the thorax, subcylindrical, punctured. Pygidium short, nearly pointed at the apex. Black; the antennæ fuscoferruginous; the prothorax, the two basal and two apical abdominal segments, the mandibles, clypeus, anterior legs, all the tarsi and the extreme apex of the intermediate and posterior tibiæ ferruginous-red. Length 5 mm.

Hab.—Mackay, Q. (♂♀ in cop.); Wagga, N. S. W.; Victoria; S. Australia.

The female from S. Australia has the legs entirely ferruginous and the third and fourth abdominal segments black on the basal half only.

E. CRASSICEPS, n.sp.

♂. Clypeus not much produced, with a short carina from the base and an oblique triangular truncation at the apex, the surface of the truncation smooth, the sides very finely punctured. Head very large, very slightly narrowed behind the eyes, densely punctured, a small v-shaped carina between the antennæ, the space between the carinæ marked with a very faint median carina. Prothorax finely punctured, the anterior margin raised, as broad

as the head but not long. Mesothorax and scutellum strongly punctured, the scutellum strongly rounded at the apex. Median segment strongly punctured, reticulate at the apex and smooth at the extreme base, obliquely truncate posteriorly. Abdomen densely covered with minute shallow punctures; first segment with a short median sulca from the base and a small tubercle at the base beneath; segments 2-4 with a small, raised, smooth mark on each side near the apical margin. Epipygium smooth, rounded at the apex. Black; the antennæ fusco-ferruginous; legs pale ferruginous marked with yellow; clypeus, mandibles, a line on the anterior margin of the prothorax and the tegulæ yellow. Wings hyaline, slightly iridescent, nervures black. Length 6-8 mm.

♀. Unknown.

Hab.—Cape York, Q.

E. FERRUGINEICEPS, n.sp.

♂. Head rather large, strongly punctured; clypeus produced moderately, transversely rugose, with a median carina from the base to the apex. Prothorax long, as broad as the head, transversely rugulose, the anterior margin raised, the sides not quite parallel. Mesothorax and scutellum strongly punctured, the scutellum subtriangular, narrowly rounded at the apex. Median segment short, depressed to the apex, finely reticulate, smooth at the base. Abdomen punctured, with a transverse line near the base of segments 2-4, which are almost smooth at the base and on the apical margin. Epipygium at the apex smooth and rounded. Black; head, except the clypeus and mandibles, the five basal abdominal segments, except the base of the first, ferruginous. Tarsi fuscous. Wings hyaline, nervures black. Length 11-13 mm.

The first abdominal segment has an acute tubercle near the centre beneath.

♀. Unknown.

Hab.—Sydney.

Apparently allied to *E. castaneiceps*, but I have not been able to study the mouth-parts.

E. CASTANEICEPS, n.sp.

♂. Clypeus produced anteriorly, rather narrowly truncate at the apex, with a longitudinal carina from the base to the apex, punctured. Head rather large, strongly punctured, the antennæ very short, a raised carina above the base of the antennæ on each side, the front between the antennæ narrowly truncate. Prothorax long and broad, as broad as the head, the sides parallel, the anterior margin raised. The thorax finely and densely punctured, most finely on the prothorax; the scutellum triangular, more sparsely punctured, with a very delicate longitudinal carina from the base to the apex. Median segment smooth at the base, very finely reticulate on the apical portion, rather short and obliquely depressed to the apex. Abdomen shining, with close, shallow punctures, the apical margins of the segments smooth. Segments 2-4 with a faint depressed transverse line near the base and a faint raised mark on each side near the apical margin. Pygidium smooth and rounded at the apex. The first segment beneath with an elevated longitudinal carina from the base, ending in a tubercle at the base of the oblique, triangular, apical truncation of the segment. Light chestnut-brown; the clypeus, anterior margin of the prothorax and postscutellum yellowish; antennæ, except the scape, and the three apical abdominal segments black. Wings hyaline, faintly iridescent, nervures fuscous, stigma testaceous. Length 12 mm.

♀. Unknown.

Hab.—Mackay, Q.

The first and third joints of the maxillary palpi are the shortest, the others subequal. May have to be separated from *Eirone*.

Genus *ARIPHRON* Erichson.

Ariphron Erichs., Arch. f. Naturgesch. viii. Pt.1, p.264, 1842(♀).

♂. Clypeus very narrowly produced, usually with a median carina; antennæ of moderate length, usually longer than the head and thorax without the median segment. Head rounded, the sides with rather long pubescence, not much lengthened and

curled as in *Tachynomyia*. The head beneath concave, but not nearly as widely so as in *Tachynomyia*. Maxillary palpi with the three apical joints filiform and much elongated as in *Aelurus*, the basal joint very short. Labium rather short, labial palpi rather stout, the basal joint the longest, without hairs at the apex. No hairs on the labium. Labrum narrow, rounded anteriorly and ciliated, rather long and slightly narrowed to the base. The galea of the maxilla shows an obscure dividing line. The abdomen is short, petiolate; the hypopygium has a spine on each side near the base, and is produced either narrowly or triangularly to the base of the apical spine. The third cubital cell is long and receives the second recurrent nervure at about one-third of the distance from the base to the apex. The claspers are very long and slender.

♀. Head flat, quadrate, broader than the prothorax, the maxillary palpi (according to Erichson) six-jointed; the mandibles not bidentate. The prothorax is deeply excavated in the known species, the median segments rather short, and the tarsal ungues simple. The pygidium varies a good deal.

Type *A. bicolor* Erichs.

Key to the Species of Ariphton.

♂♂. i. Antennæ bright orange.

A. Wholly black.

a. Median segment coarsely rugulose.

A. petiolatus Sm.

b. Median segment shining, with a few shallow punctures.

A. vagulus, n.sp.

B. Black and ferruginous.

a. Legs and abdomen, except segments 4-5, ferruginous.

A. rigidulus, n.sp.

ii. Antennæ black.

A. Wholly black.

a. Wings fusco-violaceous.

A. hospes, n.sp.

b. Wings fusco-hyaline.

a². Median segment punctured.

A. blandulus, n.sp.

b². Median segment smooth.

A. rixosus Sm.

c. Wings hyaline, iridescent.

A. nudulus, n.sp.

B. Abdomen and legs at least ferruginous or testaceous.

a. Margins of prothorax yellow, abdomen and legs ferruginous.

A. tryphonooides Sm.

b. Wholly testaceous.

A. pallidulus, n.sp.

- ♀ ♀. i. Head very much broader than prothorax, as broad as long or broader.
- a. Pygidium broadly transversely truncate at apex.
 a². Ferruginous; abdomen, except pygidium, black. *A. bicolor* Erichs.
- b². Wholly ferruginous-brown. *A. tryphonoides* Sm.
- b. Pygidium more elongate, very narrowly rounded at apex, with a strong median carina.
 a². Dull ferruginous, abdomen black. *A. blandulus*, n.sp.
- ii. Head very little broader than prothorax, rather longer than broad.
 a. Wholly testaceous. *A. nudulus*, n.sp.

ARIPHRON BICOLOR Erichs.

Ariphron bicolor Erichs., Arch. f. Naturgesch. viii. Pt.1, p.264, n.239, t.5, f.1, 1842(♀).

The male of this fine species is still unknown.

A. PETIOLATUS Sm.

Thynnus petiolatus Sm., Cat. Hym. B.M. vii. p.36, n.94, 1859(♂)

The hypopygium has a spine on each side near the base, thence very narrowly produced with parallel sides to the base of the apical spine. The clypeus is narrowly produced anteriorly and has a carina from the base, not reaching the apex.

♀. Unknown.

Hab.—Melbourne, Vic. (French); Hunter River, N. S. W.; Cairns, Q.

Melbourne specimens are 12-13 mm. in length, those from Cairns 8-10 mm. The type is from the Hunter River, and is intermediate in size.

A. VAGULUS, n.sp.

♂. Clypeus produced anteriorly, very narrowly truncate at the apex, with a median longitudinal carina from the base to the apex; the sides of the clypeus finely and densely punctured and thinly covered with rather long grey pubescence. Head and thorax punctured, median segment shining, sparsely and shallowly punctured, longer than in *A. petiolatus* Sm., narrowed and rounded at the apex. Abdomen slenderer than in *A. petiolatus*, the petiole

longer and more gradually widened, the second segment depressed at the base above. The whole abdomen shining, smooth on the basal segments, densely and shallowly punctured on the two or three apical segments. Hypopygium with an acute spine on each side, thence very narrowly produced with parallel sides, narrowing slightly and abruptly into the apical spine. Black; the antennæ bright orange, the clypeus at the apex, the mandibles and two minute spots between the antennæ fuscous. Length 11 mm.

♀. Unknown.

Hab.—Victoria (French).

Near *A. petiolatus* Sm., from which it may be easily distinguished by the shining median segment and the slenderer abdomen.

A. HOSPES, n.sp.

♂. Head broad, slightly and widely emarginate posteriorly, occiput with rather sparse, fine, shallow punctures, front densely and coarsely punctured. Clypeus with a strong median longitudinal carina, densely clothed with white pubescence. Thorax punctured, most finely on the prothorax; the anterior margin of the prothorax slightly raised, with a narrow, smooth, depressed line behind it. Scutellum broadly rounded posteriorly. Median segment rounded to the apex, very finely punctured. Abdomen petiolate, oval, shining, subpunctate; the epipygium rugose, with a delicate median carina. Hypopygium with a spine on each side near the base, thence narrowly produced and rounded at the apex, with a sharp apical spine. Beneath the abdomen is more strongly punctured, the first segment has an oblique triangular truncation at the apex. Hind trochanters with an acute spine beneath. Entirely black. Wings fusco-hyaline, with violet reflections, lighter at the base and apex, nervures fuscous. Length 14 mm.

♀. Unknown.

Hab.—Australia.

Type in Oxford University Museum, ex Coll. Saunders.

A. BLANDULUS, n.sp.

♂. Clypeus with a longitudinal median carina from the base to the apex, narrowly produced and truncate at the apex, thickly clothed with grey pubescence. Head densely punctured, pubescent, a very short, shallow sulca between the antennæ, and a delicate carina from the vertex to between the two posterior ocelli. Thorax densely punctured, most coarsely on the mesothorax, scutellum broadly rounded at the apex. Median segment finely punctured-rugulose, clothed with grey pubescence. Abdomen smooth and shining, subpetiolate; a rather deep depression near the base of the second segment. Epipygium with a few deep punctures, pubescent; hypopygium with a spine on each side near the base, thence sharply narrowed into a long apical spine. Entirely black, with ashy-grey pubescence. Wings fuscohyaline, hyaline at the base. Nervures black. Length 11 mm.

♀. Head subquadrate, large, very much broader than the thorax, shining and punctured; the front opaque, very finely and densely punctured, the punctures confluent longitudinally. A short, fine sulca between the antennæ, and a slight median depression on the vertex. The mandibles short and blunt. Prothorax narrow and depressed anteriorly, the anterior half with the margins raised, forming a prominent cordiform carina, the enclosed area depressed, the centre of the prothorax transversely elevated and the posterior portion oblique. The mesothorax very small, raised above the posterior margin of the prothorax; the median segment oblique from the base, much broadened to the apex, with a few scattered punctures, shorter than the prothorax. Abdomen shining, finely punctured, the first segment vertically truncate at the base, the third segment the broadest. Epipygium with a strong median carina from the base to the apex. Ferruginous, the abdomen black, the pygidium and the margins of the segments fuscous. Length 9 mm.

Hab.—Berwick, Vic.

Types in Coll. Froggatt.

A. RIXOSUS Sm.

Thynnus rixosus Sm., Desc.n.sp.Hym. p.168, n.27, 1879(♂).

Hab.—Champion Bay, W.A.

A. NUDULUS, n.sp.

♂. Clypeus with a median carina from the base to the apex, narrowly produced anteriorly. Head finely punctured, with thin, short, grey pubescence. The thorax is a little more strongly punctured than the head, the scutellum short, broadly rounded at the apex; the median segment obliquely depressed at the apex, smooth and shining at the base, delicately punctured on the apical portion. Abdomen subpetiolate, smooth and shining; epipygium strongly punctured. Hypopygium with a small spine on each side, thence gradually narrowed to the apical spine. Black; the apex of the sixth abdominal segment and the pygidium fuscous; spines of the tibiae testaceous. Wings hyaline, iridescent, nervures black. Length 8 mm.

♀. Head quadrate, finely punctured; a short sulca between the antennæ, broader than the prothorax. Prothorax a little longer than wide, with a deep excavation on each side of the anterior portion, divided by a prominent median carina; the mesothorax small; the median segment subtriangular, abruptly truncate posteriorly, flat above and sparsely punctured. Abdomen subcylindrical, shining, very delicately punctured, the fifth segment emarginate at the apex, epipygium lanceolate, with a strong longitudinal median carina. Entirely light castaneous-brown. Length 5 mm.

Hab.—Tweed River, N. S. W.

Types in Coll. Froggatt, without locality, but the locality on another male is as given.

A. RIGIDULUS, n.sp.

♂. Clypeus with a median longitudinal carina, narrowly produced anteriorly and truncate at the apex, clothed with grey pubescence; front coarsely rugulose, occiput shallowly punctured. Prothorax short, shining, depressed anteriorly; mesothorax and

scutellum strongly punctured. Median segment short, rounded, shining, with small shallow punctures. Abdomen petiolate, smooth and shining, the second segment depressed at the base. Hypopygium shorter than in most of the species of the genus, with a lateral spine near the base, then gradually narrowed to the base of the apical spine, which is slightly recurved. Black; the mandibles dark rufo-testaceous-black at the apex; antennæ, except the basal half of the scape, the legs, except the coxæ and trochanters, the first, second and basal half of the third and the whole of the two apical abdominal segments bright rufo-testaceous. Wings pale flavo-hyaline, nervures testaceous, the stigma fuscous. Length 12 mm.

Hab.—Melbourne, Vic.(French).

A. TRYPHONOIDES Sm.

Thynnus tryphonoides Sm., Cat. Hym. B.M. vii. 34, n. 86, 1859(♂); Sm., Cat. Hym. B.M. vii. p. 68, 1859(♀).

♂. Smith's description does not refer to the sculpture. The clypeus has a carina from the base not reaching the apex, which is smooth, thinly clothed with long cinereous pubescence. The head densely punctured. Prothorax very shallowly, mesothorax more strongly, median segment finely and densely punctured. Abdomen shining, the hypopygium with a spine on each side near the base, thence sharply narrowed into the apical spine, which is long and slightly recurved. The six or seven apical joints of the antennæ are produced and narrowed beneath at the base. The cubital nervure is bent at the point of reception of the first recurrent nervure, having beyond that point almost the appearance of being a continuation of the first recurrent rather than of the cubital nervure. The division of the first cubital cell is indicated by a faint scar only.

♀. Head quadrate, much broader than the thorax, punctured, the projection between the antennæ divided by a median suture, a small tubercle at the base of the mandibles, which are simple. The anterior portion of the prothorax depressed, with a median carina, and the lateral margins slightly raised, having a depres-

sion on each side of the carina; the prothorax posteriorly much elevated and somewhat narrowed, forming a subtubercular prominence as high as the mesothorax. Median segment punctured, short, much broadened and vertically truncate posteriorly. Abdomen shining, finely punctured; epipygium broadly truncate at the apex. Entirely ferruginous-brown. Length 7 mm.

Hab.—Adelaide, S.A.; Victoria.

A. PALLIDULUS, n.sp.

♂. Clypeus narrowly produced to the apex, finely punctured, with an indistinct carina from the base not quite reaching the apex. Head strongly punctured, with a well developed median frontal sulca. Prothorax very short and depressed; mesothorax strongly punctured, the scutellum short and broadly truncate at the apex. Median segment shining, sparsely punctured, the punctures very minute and shallow. Abdomen flattened above and beneath, smooth and shining, subpetiolate, the second segment depressed at the base. Hypopygium with a spine on each side near the base, thence very suddenly narrowed and produced, very slender, with parallel sides to the base of the apical aculeus, which is rather long. Testaceous-brown, the clypeus, front, margins of the prothorax, and postscutellum testaceous-yellow; the antennæ, except the scape and two basal joints of the flagellum, black. Length 9 mm.

♀. Unknown.

Hab.—Cairns, Q.

Genus TACHYNOMYIA Guér.

Tachynomyia Guér., Mag. de Zool. xii. 1842 (nec Ashmead).

Aelurus Westw., (nec Klug) Arc. Ent. ii. 2, p.122, 1844.

Aelurus Sm., Cat. Hym. B.M. vii. 53, 1859.

Pseudaelurus Ashm., Canad. Ent. xxxv.

♂. Head broad, the sides with a beard of long curled hairs, beneath strongly concave. The clypeus is moderately advanced, more broadly than in *Ariphron*; the cheeks are produced into a spine or tubercle at the base of the mandibles. The maxillæ are

fringed with long hairs, the maxillary palpi have the basal joint very short and the three apical joints much elongated, not quite as long and slender as in *Aelurus*. The division of the galea is obsolete. The labium has a tuft of very long hairs at the apex, and the first joint of the labial palpi is long, swollen at the apex and furnished with a cluster of very long hairs (nearly absent in some Queensland species). The abdomen is subpetiolate and the hypopygium armed, the latter varying much in shape. Labrum small, borne on a long petiole.

♀. Rugose or coarsely punctured, the head more or less convex, the mandibles simple, the labial palpi four-jointed, the basal joint the longest; maxillæ and maxillary palpi very minute, rudimentary; pygidium usually simple; tarsal ungues simple in some species, bifid in most.

Type *T. abdominalis* Guér.

This genus is amply distinct from *Aelurus* Klug, with which it was confused by Westwood and Smith. Ashmead has perceived the marked differences, but has got into confusion by a wrong identification of *T. spinolæ*, which he erroneously regards as the type of *Tachynomyia*. *T. abdominalis* is described in Guérin's work before *T. spinolæ*, and should therefore be the type of the new genus proposed for the two, which are in my opinion varieties of the same species. Ashmead's genus *Pseudaelurus* must sink in any case.

Key to the Species of Tachynomyia.

- ♂♂. A. Hypopygium with parallel sides, subconical at apex, with a central spine at the apex.
- a. Abdomen bright ferruginous.
- a². Scutellum and postscutellum marked with yellow. *T. abdominalis* Guér.
- b. Thorax and abdomen entirely ferruginous-brown. *T. concolor*, n.sp.
- B. Hypopygium with parallel sides, subconical or subtruncate at the apex, with two small notches on one or both sides of the apical spine.
- a. Second and third abdominal segments ferruginous.
- a². Clypeus with a strong median carina. *T. basalis* Sm.
- b². Clypeus without or almost without a carina. *T. rubella* Sm.

- b. entirely black.
*a*². Abdominal segments constricted. *T. paradelpa*, n.sp.
*b*². Abdominal segments not constricted.
*a*³. Pubescence on head fulvous. *T. obliterated*, n.sp.
*b*³. Pubescence on head grey. *T. senex* Sm.
c. Tibiæ and tarsi ferruginous. *T. punctata* Sm.
- C. Hypopygium emarginate at the apex, with an apical spine.
a. Second and third abdominal segments ferruginous.
*a*². Postscutellum black; mesothorax shining, sparsely punctured. *T. seduloides*, n.sp.
*b*². Postscutellum yellow; mesothorax opaque, closely punctured. *T. volatilis* Sm.
b. Black, with ferruginous legs.
*a*². Anterior margin of the prothorax and the postscutellum yellow. *T. fervens* Sm.
- D. Hypopygium broadened from the base to the apex, where it is emarginate with a long apical spine.
a. Black, the legs ferruginous. *T. abstinens*, n.sp.
- E. Hypopygium subtriangular, the sides serrate; apical spine very short.
a. Black, the legs ferruginous.
*a*². Abdomen coriaceous, clothed with fine pubescence. *T. pilosula* Sm.
- F. Hypopygium rounded, with a short apical spine.
a. Second and third abdominal segments ferruginous.
*a*². Pubescence on the front pale golden. *T. aurifrons* Sm.
b. Sides of all the abdominal segments ferruginous.
*a*². Anterior margin of the prothorax yellow. *T. combusta* Sm.
c. Black, the legs ferruginous or fuscous from near the base of the femora. *T. moerens* Westw.
- G. Hypopygium with a lateral spine on each side near the base or with prominent angles, thence gradually narrowed to the base of the apical spine.
a. Hypopygium rounded at the base of the apical spine.
*a*². Wings hyaline, crossed with a fuscous band.
*a*³. Scutellum with an apical emargination and a small tubercle on each side.
*a*⁴. Postscutellum and anterior margin of the prothorax white. *T. fascipennis*, n.sp.
*b*³. Scutellum without tubercles or emargination.
*a*⁴. Wholly black. *T. anthracina* Sm.
*b*². Wings hyaline, iridescent.
*a*³. Postscutellum and anterior margin of the prothorax white. *T. flavopicta* Ritsema.

- ♀ ♀ . A. First abdominal segment with a distinct transverse carina before the apex.
- a. Head black, thorax and legs ferruginous. Sparsely punctured. *T. abdominalis* Guér.
- b. Black, thorax and legs ferruginous. Closely punctured. *T. punctata* Sm.
- B. The carina before the apex of the first abdominal segment either absent or indistinct.
- a. Tarsal ungues bifid.
- a². Abdominal segments closely and finely punctured. *T. adusta* Sm.
- b². Abdominal segments sparsely punctured, the punctures large. *T. incana* Sm.
- b. Tarsal ungues simple.
- a². Strongly punctured. Second abdominal segment broadly emarginate on the apical margin.
- a³. Head not much narrowed posteriorly. *T. anthracina* Sm.
- b³. Head much narrowed posteriorly. *T. fascipennis*, n.sp.
- C. Pygidium contracted at the base.
- a. Sparsely punctured. Second abdominal segment not emarginate on the apical margin. *T. flavopicta* Ritsema.

T. ABDOMINALIS Guér.

Agriomyia (*Tachynomyia*) *abdominalis* Guér., Mag. de Zool. xii. p.5, 1842(♂).

Aelurus abdominalis Westw., Arc. Ent. ii. 2, p.122, 1844(♂).

Agriomyia (*Tachynomyia*) *spinolæ* Guér., Mag. de Zool. xii. p.6, 1842(♂).

Thynnus fervidus Erichs., Arch.f.Naturgesch. viii. Pt.1, p.263, n.237, 1842(♂).

Thynnus abdominalis D.T., Cat. Hym. viii. 100, 1897(♂) [nec Fabr.].

This species may be recognised by the light ferruginous colour of the abdomen with the basal segment black. *T. spinolæ* Guér., seems to be merely a colour-variety, as Guérin himself suggests. In spite of this Ashmead makes the two forms the types of distinct genera, erroneously choosing *spinolæ* as the type of *Tachynomyia*. I have seen specimens in which the black colour of the thorax is replaced by a ferruginous-red as noticed by Smith, and also intermediate forms.

♀. Head convex, subquadrate, shining and sparsely punctured, a faint median sulca on the front; prothorax broader than long, the sides parallel; mesothorax narrowed posteriorly; median segment broadened posteriorly and obliquely truncate; thorax and median segment sparsely punctured. First abdominal segment with a transverse depression just before the apex, the apical margin recurved, forming a raised carina; second segment with a transverse carina close to the base, a transverse depressed line following it; the apical margin depressed, with a transverse row of fine punctures. All the segments punctured, the three basal sparsely, the three apical finely and densely. Abdomen beneath finely punctured, the first segment with an acute tubercle at the base. Tarsal ungues simple. Fuscous; the head black; thorax, median segment and legs ferruginous; antennæ, except the scape, and the two apical abdominal segments fusco-ferruginous. Length 9 mm.

Hab.—Victoria; Tasmania.

The female is described from a specimen in the Oxford University Museum collected by Bakewell.

T. CONCOLOR, n.sp.

♂. Clypeus punctured, with a median carina from the base to near the middle, a smooth, longitudinal, median line below the carina, the apex smooth and rather narrowly truncate, the sides densely covered with long fulvous pubescence. Head finely rugulose, with fulvous pubescence on the front and a beard of long fulvous hairs on the sides. Prothorax almost smooth, the anterior margin raised, mesothorax and scutellum punctured, the scutellum broadly truncate at the apex. Median segment long, shining, almost smooth, very slightly depressed at the base. Abdomen slender, subpetiolate, almost smooth: the first segment with a deep median sulca from the base not reaching the apex. Epipygium punctured. Hypopygium prominent; the sides curving upwards, nearly parallel, slightly diverging to the apex; the apical margin subconical, ciliated, the apical spine slightly recurved. Ferruginous-brown, the head and flagellum of the

antennæ black; the clypeus ferruginous, its apical margin dull yellow. Length 14 mm.

♀. Unknown.

Hab.—Berwick, Vic.

Type in Coll. Froggatt.

T. BASALIS Sm.

Aelurus basalis Sm., Cat. Hym. B.M. vii. p.55, n.8, 1859(♂).

Thynnus sennhoferi D.T., Cat. Hym. viii. 115, 1897.

Hab.—Australia.

T. RUBELLA Sm.

Aelurus rubellus Sm., Cat. Hym. B.M. vii. 56, n.11, 1859(♂).

Thynnus friedrichii D.T., Cat. Hym. viii. 107, 1897.

The type of this species seems to be lost. It is very near the last species, but has no central carina on the clypeus, and the sculpture of the abdomen appears to be different. It is also a smaller species.

Hab.—Lower Plenty, Vic.(Bakewell).

T. PARADELPHA, n.sp.

♂. Clypeus densely clothed with cinereous pubescence, advanced and broadly truncate at the apex. Head and thorax rugulose, the cheek produced into a short blunt spine at the base of the mandibles and with a long beard of curled cinereous hairs. The pubescence pale fulvous and thin on the front and the mesonotum, cinereous and thick on the occiput, prothorax and median segment. Median segment delicately reticulate, finely punctured at the extreme base. Abdomen subpunctate, first segment short and stouter than is usual in the genus, a strong median sulca from the base not reaching the apex, and a very obscure carina from the end of the sulca to the apex. Second segment with a faint median carina from near the base to the apex; a similar carina, scarcely visible, on the third segment. Segments 2-4 with a rounded elevation on each side near the apical margin; the second strongly, the third and fourth slightly constricted near

the base. Hypopygium almost truncate at the apex, with a strong apical spine, the apical angles produced into very short spines, and the margin notched, giving it a serrated appearance. Antennæ rather shorter than in the allied species. Entirely black. Wings hyaline, nervures fuscous. Length 14 mm.

Hab.—Victoria (French).

Somewhat resembles some species of *Thynnoides*, but the mouth-parts show it to be a true *Tachynomysia*.

T. OBLITERATA, n.sp.

♂. Head finely rugulose, densely clothed with long fulvous pubescence, and a long beard of the same colour on the sides; a short, sharp spine at the base of the mandibles. Clypeus clothed with long golden pubescence, with a carina from the base to the apex. Prothorax finely, mesothorax and scutellum more coarsely rugulose; the scutellum short, broadly truncate at the apex; the prothorax thickly, the mesothorax more thinly clothed with fulvous pubescence. Median segment finely reticulate, punctured at the extreme base, with long griseous pubescence on the sides. Abdomen subpunctate, ovoid, the sculpture very shallow and indistinct, a sulca on the first segment from the base almost reaching the apex, second segment depressed at the base, the pubescence on the sides of the abdomen griseous, on the epipygium pale fulvous. Hypopygium with a slightly recurved apical spine, a short blunt tooth on the apical margin, close to the base of the apical spine, and another at the apical angle rather longer and more acute, giving the apical margin the appearance of being doubly notched on each side. Black; the mandibles fuscous at the apex, the tegulæ and the spines of the tibiæ and tarsi fusco-ferruginous. Length 11 mm.

♀. Unknown.

Hab.—S. Australia.

Type in Coll. Froggatt.

T. SENEX Sm.

Aleurus senex Sm., Cat. Hym. B.M. vii. p.54, n.5, 1895(♂).

Thynnus schroederi D.T., Cat. Hym. viii. 115, 1897(♂).

Hab.—Wagga, N. S.W.; Melbourne, Vic.

T. PUNCTATA Sm.

Thynnus punctatus Sm., Cat. Hym. B.M. vii. p. 44, n. 127, 1859 (♀).

Aelurus dentatus Sm., Cat. Hym. B.M. vii. p. 57, n. 14, 1859 (♂♀).

Aelurus incanus Sm., Cat. Hym. B.M. vii. 69, 1859 (♀ nec ♂).

Thynnus kaltenbrunneri D.T., Cat. Hym. viii. 109, 1897.

♂. The median segment is very finely rugulose and the nervures are testaceous-brown.

♀. Head subquadrate, slightly convex, broader than long, finely punctured, rather sparsely on the occiput. Thorax and median segment rather strongly punctured, the median segment much shorter than the prothorax and obliquely truncate. The two basal abdominal segments rugose, the first with a transverse carina before the apex; the second and third with a smooth mark on each side near the apical margin. Third, fourth and fifth segments finely punctured, the punctures at the base of the segments very minute. Epipygium rugulose, narrowly rounded at the apex, with fulvous pubescence. Head and abdomen black; thorax, median segment, legs, antennæ, mandibles and epipygium dull ferruginous. Length 9 mm.

Hab.—Adelaide, S. A.

The type of *T. punctatus* Sm., has the parts which are ferruginous in some specimens dark fuscous, and has a faint, short sulca on the front. It is in very bad condition, but I think I am right in identifying it with *T. dentatus* Sm.

T. SEDULOIDES, n.sp.

♂. Clypeus advanced, narrowly truncate at the apex, with a delicate carina from the base to the centre, clothed with cinereous pubescence, punctured. Head coarsely and densely punctured; a prominent almost straight carina between the antennæ and covering their base. The sides of the head with a long beard of fulvous hairs. Prothorax smooth and shining, the anterior margin raised. Mesothorax sparsely punctured on the disc, finely and closely on the sides between the sulcæ. Scutellum large, broadly rounded posteriorly. Median segment densely punctured. Abdomen with large shallow punctures; the hypo-

pygium with parallel sides, strongly emarginate at the apex, the apical angles slightly produced and the apical spine long. Beneath the first segment has a longitudinal carina from the base and is obliquely truncate at the apex. Black; the mandibles, apex of the clypeus, the carina between the antennæ, the pronotum, tegulæ, the apical half of the first, the whole of the second and third abdominal segments, and the sides of the fourth at the base and the legs, except the base of the coxæ, ferruginous. Wings hyaline, nervures fuscous, the costa testaceous.

Hab.—Berwick, Vic.

Type in Coll. Froggatt.

Near *T. basalis* Sm., in colour, but the sculpture is quite different.

T. VOLATILIS Sm.

Aelurus volatilis Sm., Trans. Ent. Soc. London, 1868, p. 237 (♂).

Thynnus mayri D.T., Cat. Hym. viii. 111, 1897 (♂).

Hab.—S. Australia.

T. AGILIS Sm.

Aelurus agilis Sm., Trans. Ent. Soc. Lond. (3) ii. 5, p. 390, 1865 (♂).

Thynnus wildaueri D.T., Cat. Hym. viii. 118, 1897 (♂).

Hab.—Swan River, W.A.

I have not seen this species. Smith does not refer to the shape of the hypopygium.

T. FERVENS Sm.

Thynnus fervens Sm., Cat. Hym. B.M. vii. p. 58, n. 15, 1859 (♂).

Thynnus pernteri D.T., Cat. Hym. viii. 113, 1897 (♂).

I have seen only one specimen of this species. It agrees well with Smith's description, but the abdomen is covered with large shallow punctures, not "fine, very shallow." The scutellum is large and very broadly truncate at the apex.

Hab.—Victoria.

T. ABSTINENS, n.sp.

♂. Head coarsely punctured, rugulose on the front, clypeus densely covered with pale fulvous pubescence, produced and rather narrowly truncate at the apex. The cheeks produced

into a blunt tubercle at the base of the mandibles, and with a long curled beard of pale fulvous hairs. Prothorax short, the anterior margin slightly raised, sparsely and shallowly punctured. Mesothorax and scutellum coarsely punctured; median segment very finely punctured at the base, finely reticulate on the apical portion, with grey pubescence on the sides. Abdomen shining, subpunctate, the first segment with a median sulca from the base, not quite reaching the apex; second segment depressed and slightly constricted at the base. Hypopygium prominent, with a median carina beneath, strongly narrowed near the base, then gradually widened to the apex, which is strongly emarginate on each side of the long apical spine, which is slightly recurved, the apical angles are produced into short spines. Black; the mandibles on their inner margin and the legs, except the coxæ and trochanters, ferruginous. The pubescence on the head and disc of the thorax pale fulvous, elsewhere grey. A few fulvous hairs on the apical margin of the hypopygium. Length 10-14 mm.

♀. Unknown.

Hab.—Victoria (French).

T. PILOSULA Sm.

Aelurus pilosulus Sm., Cat. Hym. B.M. p.56, n.10, 1859(♂).

The clypeus is finely punctured, with a delicate carina from the base to the apex; the head and thorax are finely rugulose, the scutellum punctured, the median segment delicately reticulate. The abdomen is finely coriaceous, the epipygium shallowly punctured. The hypopygium is subtriangular with two or three small lateral notches and a short apical spine.

Hab.—Victoria; Sydney, N. S.W.

T. COMBUSTA Sm.

Aelurus combustus Sm., Cat. Hym. B.M. vii. 55, n.9, 1859(♂).

Hab.—Moreton Bay.

T. AURIFRONS Sm.

Aelurus aurifrons Sm., Cat. Hym. B.M. vii. 55, n.9, 1859(♂).

The head and thorax are rugose and opaque, the prothorax and median segment shining and rugulose. Abdomen shining.

with shallow punctures, the segments smooth at extreme base and apex. The scutellum is broadly truncate at the apex.

Hab.—Albany, W.A.

T. MOERENS Westw.

Aelurus moerens Westw., Arc. Ent. ii. 2, 124, 1844(♂).

Aelurus incanus Sm., Cat. Hym. B.M. vii. p.53, n.4, 1859(♂).

Aelurus vulpinus Sm., Cat. Hym. B.M. vii. p.54, n.7, 1859(♂).

Thynnus schoberi D.T., Cat. Hym. viii. 115, 1897.

♂. The clypeus has the anterior region narrowly pale yellow; the colour of the legs varies from fuscous to ferruginous.

♀. Head, thorax, median segment and two basal abdominal segments coarsely rugose, the head slightly convex, much broader than long, with a deep depression on each side between the eye and the base of the antenna. Prothorax broader than long; median segment short, obliquely truncate posteriorly, the surface of the truncation finely rugulose. The tarsal unguis bifid. The apical margin of the first abdominal segment raised, forming a transverse carina, and a well marked transverse carina near the base of the second segment. The remaining segments punctured, most sparsely on the sides, almost smooth at the base. Epipygium finely rugulose, narrowly rounded at the apex. Fuscous, antennae and legs ferruginous. Length 13 mm.

Hab.—Shoalhaven, Bombala, N. S.W.; Melbourne, Vic.

The female described by Smith (Cat. Hym. B.M. vii. 69) is that of *T. dentatus* Sm.

T. ADUSTA Sm.

Thynnus adustus Sm., Cat. Hym. B.M. vii. p.43, n.122, 1859(♀).

♀. Head and thorax coarsely punctured, the punctures confluent; the head convex, much broader than long, very strongly rounded at the posterior angles. Median segment longer than usual in the genus, broadened posteriorly and obliquely truncate. The two basal abdominal segments rugose, the apical margin of the basal segment forming a strongly raised carina with a depressed transverse line in front of it. Second segment with a transverse carina close to the base, nearly covered by the first

segment. The remaining segments finely and densely punctured, rather more sparsely and deeply on the apical portion of the segments. A smooth, shining mark on each side of the third and fourth segments near the apical margin. Pygidium rugulose, smooth at the extreme apex, with a faint median longitudinal carina. Tarsal ungues bifid. Fuscous; legs, mandibles, clypeus and antennæ fusco-ferruginous. Length 13 mm.

♂. Unknown.

Hab.—Australia.

T. ANTHRACINA Sm.

Aelurus anthracinus Sm., Descr. n.sp. Hym. p.174, 1879(♂♀).

Thynnus mülleri D.T., Cat. Hym. viii. 111, 1897(♂♀).

♂. Clypeus subtriangularly produced, clothed with whitish pubescence; and a median longitudinal carina from the base to the apex. The head densely punctured, a beard of grey hairs on the sides, a rounded carina between the antennæ. Prothorax broad and short, the anterior margin curved backwards at the sides and produced. The whole thorax densely punctured, most finely on the prothorax. Scutellum short, broadly subtruncate at the apex. Median segment very closely and finely punctured, with grey pubescence on the sides. Abdomen subpetiolate, smooth and shining, the two apical segments with shallow punctures. Hypopygium with a sharp angle on each side near the base, thence broadly produced and rounded at the base of the apical spine. Black. Length 13-15 mm.

♀. Strongly rounded to the hind margin, very strongly punctured, with a very delicate, short, frontal sulca. Thorax and median segment strongly punctured; the prothorax broader than long, the median segments broadened and obliquely truncate posteriorly. Tarsal ungues simple. The two basal abdominal segments rugose, the rest longitudinally punctured-rugose, the epipygium truncate at the apex, with a low broad median carina. Segments 2-4 smooth at the base. Fusco-ferruginous. Length 10-12 mm.

Hab.—Bowen, Mackay, Q.

T. FASCIPENNIS n.sp.

♂. Clypeus very narrowly advanced and truncate at the apex, densely clothed with cinereous pubescence, with a strong median carina from the base to the apex. Head strongly and very closely punctured, the interantennal prominence very broadly rounded at the apex; posterior margin of the head straight, finely and closely punctured on the vertex and behind the eyes; the sides with a beard of long grey hairs. Prothorax short and broad, finely punctured, the anterior angles prominent and recurved. Mesothorax finely punctured, a raised oblique carina on each side above the tegulæ. Scutellum prominent, almost vertically truncate posteriorly, the apex strongly emarginate, the angles forming a slight tubercle on each side. Median segment rounded, finely reticulate, with grey pubescence on the sides. Abdomen subpetiolate, elongate-ovoid, shining, sub-punctate; the first segment narrower at the apex than in *T. anthracinus* Sm., with a very short median sulca from the base. Third and fourth segments wider than the second. Hypopygium with a spine on each side near the base, thence gradually narrowed to the base of the apical spine, where it is narrowly rounded. Black; the postscutellum white. Wings hyaline, nervures fuscous; a broad irregular fuscous band crossing the forewing from the stigma. Length 11-14 mm.

♀. Head, thorax, and median segment coarsely rugose; the head gradually narrowed to the posterior margin, where it is narrower and not so strongly rounded at the posterior angles as in *T. anthracina* Sm. The prothorax is broadest in the middle; the median segment rather shorter than the prothorax, much broadened to the apex, where it is almost vertically truncate. Abdomen longitudinally rugulose, rugose on the two basal segments. Segments 3-5 almost smooth at the base; the epipygium with a delicate, median, longitudinal carina. Dark fuscous; the mandibles, antennæ, and legs fusco-ferruginous. Length 9-13 mm.

Hab.—Cairns, Q.

Very near *T. anthracina* Sm., from which it differs in the male by the shape of the scutellum and the white colour of the post-

scutellum. The shape of the head in the female is different, and the median segment is more abruptly truncate.

T. FLAVOPICTA Ritsema.

Aelurus flavopictus Ritsema, Ent. Mag. xii. p.185, 1876(♂).

Thynnus seemüllerii D.T., Cat. Hym. viii. 115, 1897.

♂. Clypeus narrowly advanced, very finely punctured, smooth at the apex, with a carina from the base almost reaching the apex, thinly clothed with grey pubescence. Head punctured, the sides with a beard of cinereous pubescence, the cheeks bluntly produced at the base of the mandibles, a delicate longitudinal carina from the vertex, almost reaching the anterior ocellus. Prothorax short and broad, not produced at the angles, very sparsely punctured. Mesothorax and scutellum punctured, the scutellum short, truncate at the apex; median segment opaque, pubescent, punctured-rugose. Abdomen smooth and shining, the petiole long and slender, the second segment depressed at the base. Hypopygium with a spine on each side near the base, thence gradually narrowed, the apical spine very short. Black; the anterior margin of the clypeus, two small spots between the antennæ, the anterior margin of the prothorax, narrowly interrupted in the middle, the tegulæ and the post-scutellum yellowish-white. Wings hyaline, faintly iridescent, nervures black. Length 11 mm.

♀. Head, thorax, and median segment strongly and rather sparsely punctured; head subquadrate, slightly convex, rounded at the posterior angles; prothorax subquadrate, rather broader than long; mesothorax narrowed posteriorly; median segment short, much broader at the apex than the base, obliquely truncate posteriorly, the surface of the truncation very densely and finely punctured. The thorax narrower than the head or abdomen. Abdomen with the first segment vertically truncate at the base, the three basal segments strongly and rather sparsely punctured, the apical margins slightly depressed; fourth and fifth segments densely covered with fine, shallow punctures. Pygidium contracted at the base, narrow, widened to the apex, where it is

rounded, with a median, longitudinal carina. Dark fuscous, the head black; mandibles, antennæ, legs and pygidium ferruginous. Length 9 mm.

Hab.—Mackay, Q. (♂♀ in cop.), Cairns, Cape York, Q.

Described by Ritsema from an Aru specimen. In Aru specimens the scutellum is rather longer, and more rounded than truncate at the apex.

T. BARBATA Sm.

Aelurus barbatus Sm., Cat. Hym. B.M. vii. p.57, n.13, 1859 (♂♀).

I have not seen this species, and the type, which was in Bake-well's Collection, appears to be lost. The female seems to be distinguished from that of all other species of the genus by the sculpture of the second abdominal segments.

Species of *Tachynomyia* have been described from the Austro-Malayan region and not yet recorded from Australia as follows:

1. T. COMATA Sm.

Aelurus comatus Sm., Journ. Proc. Linn. Soc. Zool. vii. p.27, 1863 (♂).

Hab.—Waigiou.

2. T. FRAGILIS Sm.

Aelurus fragilis Sm., Journ. Proc. Linn. Soc. Zool. viii. p.78, 1864 (♂).

Hab.—Morty.

3. T. INSULARIS Sm.

Thynnus insularis Sm., Journ. Proc. Linn. Soc. Zool. vii. p.26, 1863 (♀).

Hab.—Mysol.

The following species which have been described as belonging to *Tachynomyia* or *Aelurus* should in my opinion be placed elsewhere:—*Tachynomyia caelebs* Sauss., *Tachynomyia nitens* Sauss., and *Aelurus fulvifrons* Sm. These will be dealt with in a later paper.